

April 8, 1988

Looking at Our '88 Goals

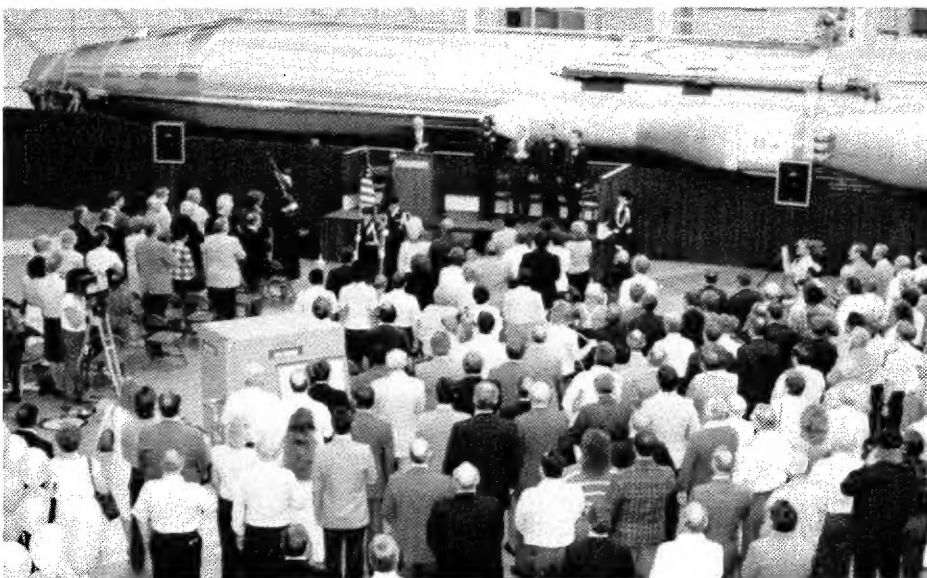
by Dr. Alan Lovelace

Vice President & General Manager

As we begin the second quarter of the year, let's review our division goals. Many of our employees have devoted long hours toward development of the proposal for the Air Force Medium Launch Vehicle II program, an opportunity that could double our production of Atlas/Centaurs over the next seven years. Winning the MLV II program, however, is just one of the many challenges facing Space Systems Division in 1988. While there will be many opportunities for this division to win important new space contracts throughout the year, we must not lose sight of the challenge of solidifying our programs currently under firm contract.

Our foremost goal in 1988 is successful transition into full production on both the Titan/Centaur and Atlas/Centaur programs. This effort will include completion of the production area upgrade in Building 5 at Kearny Mesa and at Air Force Plant 19, as well

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Rollout ceremony on March 31 for the delivery of Atlas 45E at Vandenberg AFB.

Final Atlas E Rollout

On Thursday, March 31, General Dynamics Space Systems Division delivered the last Atlas E to the U.S. Air Force. Atlas 45E was the final booster refurbished under the Vandenberg Atlas Modification program. The rollout ceremony held at Vandenberg AFB, included top officials and members from both Space Systems Division and the U.S. Air Force.

Commending the teamwork between General Dynamics and the Air Force, Bill Phillipp, Atlas/Centaur and Atlas program director, said in his opening remarks, "Your dedication from the very first Atlas 'F' vehicle in 1965, through to this upcoming flight in July, has been symbolic of the excellence that has brought the U.S. space program from a dream in the minds of only a few to the leading position in the world it holds today."

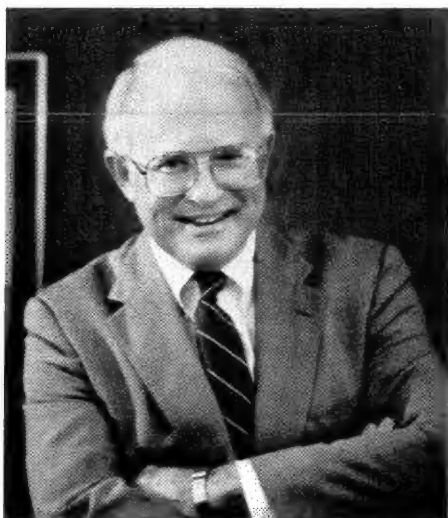
Atlas 45E was produced and assembled in 1961 at the company's

former Astronautics Division in San Diego, and was "sold" to the U.S. Air Force in April of that year. Following delivery to the Air Force, Atlas 45E was transferred to Forbes Air Force Base in Kansas. It stood ICBM duty at Forbes until 1965 when it was sent to Norton AFB, California. It was later identified as a possible exhibit missile for the Smithsonian Institution.

In September 1985, it was sent to Vandenberg for modification. It came back to the General Dynamics facility in San Diego in March 1986 where it underwent bulkhead repair and ring weld modification to accommodate a new fairing. In April 1987 it was returned to Vandenberg, and work under the Vandenberg Atlas Modification program was started in July.

The Atlas vehicle has been used for more than 25 space programs and has launched nearly every unmanned lunar

(Continued on page 4)



(Lovelace continued from page 1)

as implementation of low-cost assembly operations at our facilities at Vandenberg Air Force Base and in Harlingen, Texas. These manufacturing facility improvements will be instrumental to ensuring that the division meets all cost and schedule commitments in producing Titan/Centaurs for the Air Force and Atlas/Centaurs for both commercial and government customers.

Although March 31 marked the end of the Atlas E refurbishment program with the delivery of the final vehicle to the Air Force, the launch services program will continue with up to three Atlas E missions scheduled to fly out of Vandenberg in 1988, beginning in July. Our goal of 100% launch success could further extend the division's current string of 17 consecutive successful Atlas launches, the longest such record in the world. These successes include 12 consecutive Atlas Es and a perfect five-vehicle Atlas H program, the last of which was launched in 1987.

1988 is also a critical year for achieving those goals necessary to secure the division's long-term future. Perhaps the most important of these is our goal to win the Air Force Advanced Launch System Phase II contract, the next-generation launch vehicle system designed to carry heavy payloads into orbit at a fraction of today's cost. The division has already won several technology contracts in support of this effort and other advanced space transportation programs, and we will have the opportunity in 1988 to build on our excellent technology win/loss record of 1987.

To achieve the goals we have set for ourselves, we will all have to take a little extra time to be sure we're doing the best job possible. In the short term we must find ways to reduce costs without sacrificing quality to become more competitive in today's marketplace. We must also be responsive to the customer and honor those commitments we have made to meeting costs and schedules. And to support the division's future, we must submit only the highest quality proposals to bring home those advanced programs initiated in 1987. I look

forward to working together with you to accomplish all of our 1988 goals and to making 1988 a year to remember for Space Systems Division.



Congratulating Jim Ramsey on his winning newsletter name Orbiteer are (left) Marty Winkler, vice president of Research & Engineering and (far right) Bernie Kulchin, vice president of Human Resources.

Ramsey Wins Newsletter-Naming Contest

The two-week contest to name the new Space Systems Division newsletter brought in an avalanche of entries from General Dynamics employees — 650 at last count, with only 115 duplications. The lengthy entry list is an indication of how creative Space Systems employees are.

An ad hoc committee was established to select the name. After the judges had examined every entry from "A Letter from Space" to "Zero Gravity," their favorite was *Space Systems Division Orbiteer* from Jim Ramsey. "The name Orbiteer," he said upon the announcement, "refers to the purpose of our products, taking it down to a very individual level."

Jim is a senior engineering specialist in the Engineering Advanced Structures department working on hypersonic technology development. He will receive a framed lithograph of an Atlas/Centaur launch, signed by the artist from a numbered collection. Jim will also enjoy a dinner for two at a San Diego area restaurant.

Celebrating Secretaries Week

Secretaries Day is celebrated nationwide on April 27. At Space Systems Division, the festivities will continue all week long. It's a time to thank secretaries and management support for their hard work and their part in making the workplace function so smoothly.

All secretaries and management support personnel are invited to participate in Space Systems Secretaries Week activities from April 25 — 29. Last year's success of the Management Support Team Focus activities prompted the development of a program with expanded topics, time frames, and activities. Seminar topics include career development, interpersonal skills, and nutrition. Of special interest will be Nicole Reynolds, a San Diego area consultant specializing in communication and motivation, who will talk about women and the secretarial role.

Check the *Developer*, a Training & Development newsletter, for the complete schedule of activities for Space Systems Secretaries Week. Signup is being handled by division training coordinators. Questions can be referred to Lisa Lawrence at 77833.

Materials & Processes Tops in Safety

*by Bill DeGarmo
Safety & Health Manager*

Based on outstanding safety and health practices through the year, Materials & Processes (department 856) became the winner of the 1987 Safety contest. As the winners, Materials & Processes employees and their families will enjoy a picnic in their honor, to be held at the CRA Missile Park this summer.

The purpose of the Safety contest is to create positive safety attitudes, prevent accidents, and involve employees in the safety and health process. Judging includes employee participation in monthly department safety meetings, routine safety inspections, and a reduction of work-related injuries.

4/8/88

Lab and production departments compete for this award each year. Monthly reports indicate how well each department is doing in the area of safety. Taking a proactive approach to preventing accidents, as Materials & Processes has done, is not only the best way to stay safe and healthy, but the best way for *your* department to win the 1988 Safety contest.



New Expense Reports (form number SSD5012) become effective April 15.

Labor Accounting implements **timecard changes** on April 16, including the use of the check mark and new time distribution cards. Labor Help Line is 77311. **Tuition reimbursement** forms should be submitted on Wednesdays to Training & Development. Mail to **Payroll** should be placed in the DSD mail drops, addressed to MZ RA-0740. **Marketing Communication & Proposal Development** has moved to Viewpoint Plaza, Building 2. Their phone number is 68770, MZ V2-7092. Employee discount tickets to **Air/Space America** are now available at CRA.

Supplier Conference Quality Products Delivered on Time

Over one hundred key suppliers attended the first division supplier conference in 1988 sponsored by the Material Department. It was held at the Montgomery Field Holiday Inn.

The theme of the one-day conference was "Quality Products Delivered on Time." A series of presentations relating to GDSS products, procurement standards, and expectations were offered by division staff and customer representatives. Special guest speakers included Colonel Seb Coglitore, USAF Space Division, and Alan Schaeffle, vice president of the Titan/Centaur program of Martin Marietta Aerospace. A tour of the thermal acoustic facility and the Titan/Centaur mockup area led by Production's Bob Hinck concluded a very successful event.

The next supplier conference, with the theme "Statistical Process Control," is scheduled for the fourth quarter of this year.



CLS management preparing for the anticipated move to new offices on the corner of Ruffin and Balboa. From left are Andy Calimbas, Dennis Dunbar, John Derango, Bob Dupuis, Carl Paesel, and Phil Whisnant.

GD Establishes New Subsidiary, Commercial Launch Services

General Dynamics Commercial Launch Services, Inc. (CLS) was established last month as a new, wholly-owned subsidiary. Dennis Dunbar, former director of Commercial Launch Services for Space Systems Division, has been named vice president and managing director. He will continue to report to Dr. Alan Lovelace, vice president and general manager of Space Systems Division.

In making the announcement, Herb Rogers, General Dynamics president and chief operating officer, said, "We made a very strong commitment to the satellite launching business last summer when we

decided to produce 18 Atlas/Centaurs for the commercial marketplace. The establishment of General Dynamics Commercial Launch Services further reinforces this commitment."

CLS will provide commercial launching services for the Atlas/Centaur launch vehicle. Its functions will include worldwide marketing, business development, mission analysis, and mission management services necessary for launching U.S. and foreign satellites. It will be the customer focal point dedicated to the unique business requirements of commercial launch ventures.

Space Briefs

Material Department's **Roy Bennett** sponsored an All-Hands Meeting for his department at CRA, complete with pizza and a d.j., thanking them for their hard work and extra effort. . . . Serving as judges at the Greater San Diego Science and Engineering Fair next week are **Yolanda Mendoza, Jim Valk, and Bruce Cordell**. Eight hundred science winners from local schools will participate, with promotional items being supplied by the **Marketing department**. . . . The **ALS Program** is gearing up for the Phase I contract Midterm Design Review on April 25, with over 100

customers expected. . . . It seems that **Material** has challenged **Contracts & Estimating** that for every person they have at WalkAmerica on April 23, Material will have three. . . . Visiting SSD this past week was **Congressman Robert Roe**, a member of the Science, Space, and Technology Committee. . . . **Rick Pepin** was selected as Production's Employee of the Quarter. . . . Recent upgrades at the **Plant 19** facility have made vast improvements in the area, none so popular as the remodeling of the restrooms. . . . **SSD employment** for the week ending April 1 was 3,276.

(Rollout continued from page 1)

and planetary mission flown for America, including Pioneer, Ranger, Mariner, Lunar Orbiter, and Mercury. Atlas has achieved many firsts for the U.S. space program, including launching the first communications satellite, the first American manned orbital flight, and the first interplanetary flyby.

"The Atlas E will continue to launch from Western Test Range into the early '90's in support of the National Oceanic & Atmospheric Administration and Defense Meteorological Satellite Programs," said Bill Phillipp. "An old era is over, but a new era is just beginning for Vandenberg. Work will begin soon on refurbishment of the facilities to do final assembly on a new line of commercial Atlas/Centaurs. The family of Atlas vehicles is being upgraded to meet the new challenges of tomorrow's space program."

March of Dimes

Walk with America

"We'd like to see the entire division participate, either as walkers or as sponsors. Let's make April 23 a fun day — invite your family and friends to

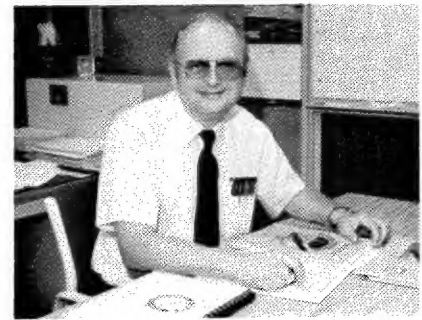
join us on Fiesta Island for WalkAmerica," says Julie Lawrence, SSD coordinator for WalkAmerica.

Prevention of birth defects is the number one goal of the March of Dimes. In 1958, they ensured the conquest of polio. Then they turned their attention to the group of diseases constituting the nation's single largest health problem — birth defects.

WalkAmerica will be held on Saturday, April 23 at Fiesta Island. The scenic route which winds around Mission Bay, is 30 kilometers (18.6 miles). Check-in will be between 7:00 and 10:00 a.m. The official kickoff is at 8:00, complete with balloons and banners. Sponsors can pledge money for each mile walked or a flat amount.

Those who obtain sponsors and collect monies prior to the day of the walk will receive a free General Dynamics WalkAmerica T-shirt. The San Diego community has donated a number of prizes and gifts for the event. General Dynamics is also hosting a free, all-day picnic on Fiesta Island.

Each department has a TeamWalk coordinator responsible for keeping a headcount and distributing sponsor sheets. Call Julie Lawrence at 77403 if you have any questions.



Welcome to the first issue of *Space Systems Division Orbiter*, a newsletter dedicated to our division and employees. For more than two years, we have shared a newsletter with Convair, but as Space Systems continues to grow, newsworthy employee and division activities have grown commensurately. The need for our own newsletter has been firmly established.

The purpose of *Space Systems Division Orbiter* is to report the way employees—like Bob Cook, senior project engineer—work together, to show the superior products they produce and to share newsworthy information about events in Space Systems Division.

Bob has been a General Dynamics employee since 1964, when he joined the Astronautics Division as an associate engineer. Working in the Titan/Centaur program office, Bob is now the Inertial Measurement Group product manager. He works with existing and second-generation Block II avionics and their subcontractor, Honeywell.

Bob moved to San Diego from Laramie, Wyoming, where he attended the University of Wyoming to receive his degree in electrical engineering. Bob and his wife, Diana, have three boys.

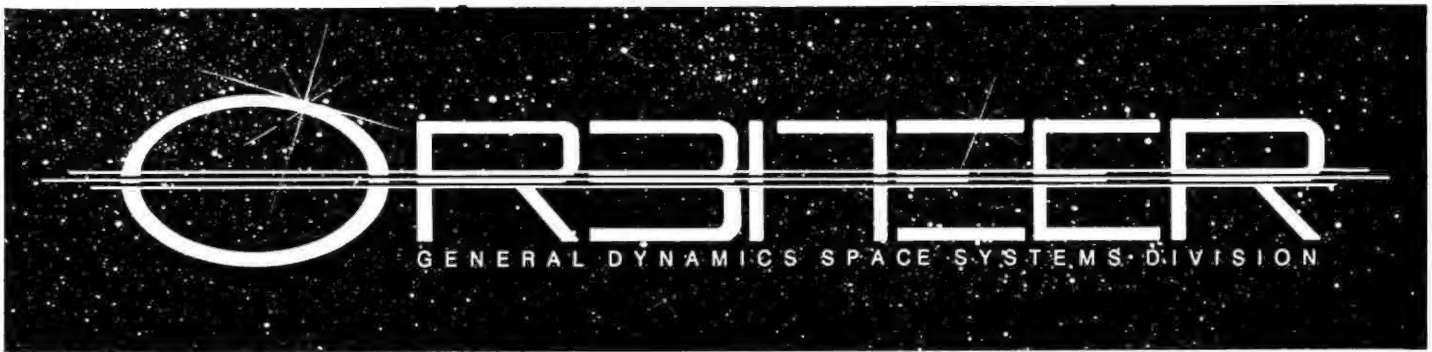
When asked what he likes best about Space Systems, he replied, "I've always enjoyed working on space programs. That, and management's people-oriented attitude, make this a great place to work."

Space Systems Division Orbiter is published every other Friday. Special thanks to graphic artist Chris Galvan and the Graphic Services department. Items of interest to readers should be addressed to *Orbiter*, Mail Zone C2-7145 (Post Office Box 85990, San Diego, CA 92138). Telephone (619) 547-7312.

Linda Loffredo, Editor



Recent college hires at Space Systems Division enjoyed a visit with Dr. Alan Lovelace, division vice president & general manager, at a reception held at CRA Missile Park. The afternoon program, entitled "Getting the Big Picture," provided employees with an opportunity to learn about other departments and to understand their role in the daily business functions of Space Systems Division. Standing from left are: Fred Southerton, Doug Herbig, Mike Wagner, Dwight Gilbert, and Steve Wong. Sitting from left are: Linda Eue, Milan Patel, Jeff Elbel, Dr. Alan Lovelace, and Andrew Schickling.



April 22, 1988

Congressman Roe Visits Space Systems

Indicating his strong support for the U.S. space program while talking to a standing-room-only crowd, Congressman Robert Roe made several points during his visit to Space Systems on Friday, April 8.

Roe is the chairman of the House Science, Space, and Technology Committee, responsible for a 1988 allocated budget of \$1.65 billion. A democrat from New Jersey, he has been a member of Congress since 1969.

The congressman stressed "the importance of the advancement of space exploration technologies as an investment in America's future. Institutionalizing the space program will be an important part of the economics and dynamics of this country." To this end, he discussed worldwide education trends and proposed including science studies at an earlier age for American children.

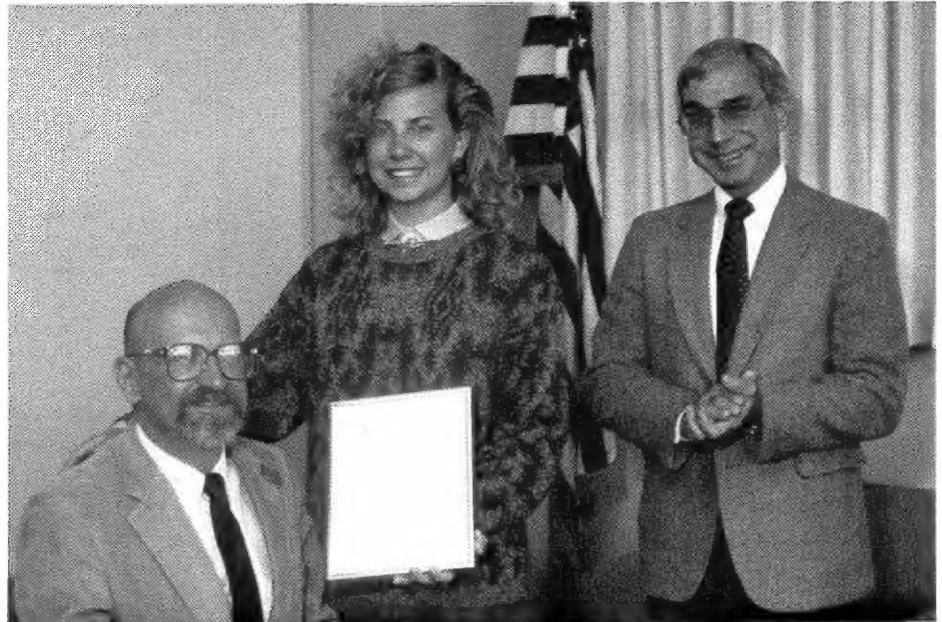
Congressman Roe is a strong supporter of the Superconducting Super Collider program. He is leading an effort in Congress to draft legislation that will authorize construction go-ahead for the program. This legislation will be

(Continued on page 2)

Con-Trib Kicks Off Annual Fund Drive

The employee's Con-Trib Club of General Dynamics (Space Systems, Convair, and Data Systems), the company's United Way organization, holds its annual fund drive from Monday, April 25, through Friday, May 6.

Ninety percent of the Con-Trib funds go to supporting a wide range of agencies in the San Diego community. For example, in December of last year, \$1500 was given to the Leukemia Society of



Jack Youngs (seated), with daughter Christine, accept the company-sponsored merit scholarship presented by Bernie Kulchin - vice president of Human Resources.

Jack Youngs' Daughter Wins National Merit Scholarship

Christine Youngs, daughter of Space Systems' Jack Youngs, was the proud recipient of a National Merit Scholarship announced this month by General Dynamics Corporate Office and the National Merit Scholarship Corporation.

The Merit Scholarship competition is conducted annually among high school students nationwide. Being selected is a distinct honor, for the awards are granted to less than one tenth of one percent of the nation's high school graduating class.

Jack was "very pleasantly surprised" with the announcement of his daughter's scholarship. He had picked up information about the company scholarship through the Training & Development department, and had helped Christine to gather and submit the required information. A 24-year veteran of General Dynamics, Jack is a cost development engineering specialist in the Contracts & Estimating Economic Analysis group.

Christine is finishing her senior year at Gompers Secondary School in southeast

(Continued on page 2)

America to assist local leukemia patients unable to meet the high costs of medical treatment. The San Diego Mental Health Association used their \$2000 Con-Trib donation to provide counseling to grade school children away from home for the first time in a program entitled, "I'm Off to School."

The Meals-on-Wheels program, enabling many senior citizens to maintain their independence, last month, accepted

(Continued on page 3)

Equal Employment Opportunity and Affirmative Action Overview

In this series of questions and answers, James Brown describes his work and explains how he can assist employees.



James is the new administrator of the Equal Employment Opportunity and Affirmative Action (EEO & AA) programs. He joins us from Electric Boat, where he served as a senior labor relations representative.

Q: What are your responsibilities?

A: I serve as a consultant to all employees in the area of equal employment opportunities and affirmative action. I help identify problems and

resolve complaints of discrimination relating to compensation, promotional opportunities, training, hiring and termination policies. I'm also available to discuss any issue related to sexual harassment or discrimination based on sex, age, race, religion, or handicaps. It is my responsibility to disseminate EEO and AA policy to employees, to work with various enforcement agencies, and to maintain appropriate community contacts.

This division is strongly committed to a work environment free from any kind of discrimination.

Q: How are questions and problems resolved?

A: An employee can contact me at any time in complete confidence and with no

fear of retaliation. I will investigate problems and concerns and get back to the inquirer with the results. When necessary, I will arrange meetings with all parties concerned to resolve the issue.

Employees are encouraged to first contact their supervisor to resolve problems, conflicts, or issues at hand. If the employee doesn't feel the problem has been satisfactorily resolved, issues can be taken to the next management level, all the way to the vice president of Human Resources if necessary.

Q: How can an employee contact you?

A: I can be reached at 77888.

Employees can also stop by my office on the second floor of Century Park, building two in the Professional Staffing area.

(Scholarship continued from page 1)

San Diego. Gompers is a magnet school specializing in math, science, and computer studies for students in grades seven through twelve.

Christine took the Preliminary Scholastic Aptitude Test (PSAT) during her junior year. She became a semi-finalist for this scholarship when those test results put her in the top half of the top one percent in the country. The PSAT measures verbal and mathematical abilities, which have been shown to be related to success in college work. In her senior year, she completed the Scholastic Aptitude Test (SAT), keeping her test results high. In addition, her course work and an essay were evaluated.

As the senior class president, Christine is a member of the Gompers student government and the associated student body council. She is also the senior section editor for the yearbook and is a member for the Student Advisory Board for the Greater San Diego Science & Engineering Fair.

Christine plans to study astrophysics and Russian studies at either Stanford or Princeton University, making the final decision by May 1. The scholarship award is \$3,000 per year, renewed annually by the company for four years of undergraduate study.

(Congressman continued from page 1)

contingent upon contributions from foreign countries as well.

During the day, he attended briefings on the Advanced Launch System, Medium Launch Vehicle II, Titan/Centaur, and energy programs. The thermal acoustic test facility highlighted his tour of the plant facilities. The Marketing department hosted the congressman's visit.

Retirees

Thanks and good luck to these Space Systems employees who recently retired:

Robert Arpin, Engineer Senior, Engineering Services, ESMC Operations, 26 years

Richard Bailey, Engineering Specialist, Test Planning & Data, 30 years

Davies Cone, Painter, Support Services, ESMC Operations, 30 years

Carl Crone, Engineering Specialist, Operations Analysis, 28 years

Robert Crouse, Group Engineer, Automatic Test Equipment, 26 years

Denis Dodd, Jr., Engineer, Structures & Mechanical Systems, 14 years

Reginald Foley, Jig & Fixture Builder, Mockup, 14 years

Mavis Humphrey, Secretary, Launch Vehicle Engineering, 27 years

Henry Lewis, Jr., Engineering Specialist, Component Test Equipment, 27 years

Frank Lucio, Inspector in Fabrication & Assembly, Quality Assurance, 35 years

Anthony Meziere, Launch Service Field Mechanic, Quality Assurance, ESMC Operations, 46 years

Paul O'Dell, Subcontract Representative, Production Control, 46 years

Alfonso Padilla, Engineer Senior, Atlas/Centaur Launch Operations, ESMC Operations, 27 years

William B. Phillips, Launch Operations Supervisor, ESMC Site Support, 31 years

Daniel Sarokon, Manager, Base Operations, ESMC Operations, 30 years

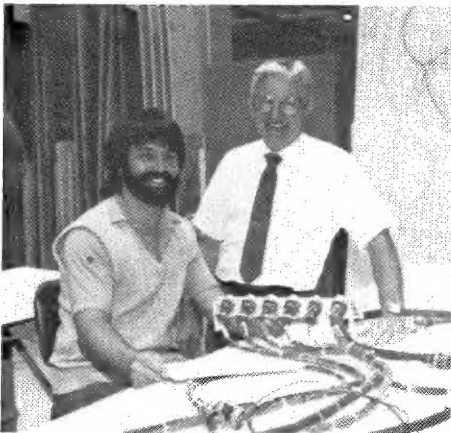
Thomas Stevenson, Launch Service Technician, ESMC Site Support, 30 years

Grace Young, Accountant, ESMC Operations, 32 years

Just Making a Suggestion

Necessity being the mother of invention, David Cates, mockup systems electrical mechanic, discovered a better way to do his job. Submitted through the Employee Suggestion (ES) program, his new technique for producing high-quality harness fixture tools was approved in February and has already been implemented in the Atlas/Centaur and Titan/Centaur Mockup area. The savings to the company in the first year alone was just under \$20,000.

David completed the mockup harness configuration in December and was ready to draw the harness routing lines using pen and ink. He learned that Atlas/Centaur 68 needed a complete new section for the aft end and it would have taken five working days for him to complete the task.



David Cates and supervisor Ed Jaeschke are at work in the mockup area, where David's employee suggestion has already been implemented.

Using the crepe tape method proposed in his employee suggestion, David finished the job in eight hours. The crepe tape had good adherence, produced curved lines with no distorting effect, and was available in a variety of widths. By using this new method, labor hours were reduced dramatically and the cost of materials decreased. Quality, cost-savings, producibility — all by just making a suggestion!

(Editor's Note: If you have a good idea, complete an employee suggestion form and address it to MZ 22-7140 or contact Susanna Bruno, Employee Suggestion program coordinator, at 77427.)

(Con-Trib continued from page 1)

a \$2000 donation from the company's Con-Trib Club. The La Jolla Cancer Research Foundation purchased a DNA sequencer with the help of \$8,500 from Con-Trib. The DNA sequencer is used to analyze the chemical components of DNA within genes hundreds of times faster than was previously possible.

The General Dynamics Con-Trib Club provides a way for us to help the community. Be looking for details during the next two weeks about how you can contribute. Questions should be directed to Susan Norris, Con-Trib Club Board of Directors secretary, at 28250.

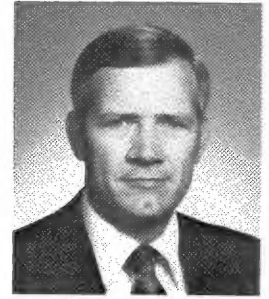
☐ Success is a marathon, not a sprint. ☐

FYI

When submitting business expense reports, a complete description of all incurred expenses is required to determine the amount reimbursable to the employee. . . . A new **Graphic Services department** offers editing, design, and production of presentations, brochures, technical papers, and proposals. Graphic Services is located at Viewpoint Plaza, building two on the first floor, extension 68809 or 68826. . . . Internal **Management Effectiveness Program** reviews began this month. . . . Twenty five engineers are participating in the first **Systems Engineering Institute** program in Research & Engineering.

Squires Named Production Vice President

Ed Squires joins Space Systems as the division vice president of Production. Ed, who had been the division vice president of Cruise Missile Production at



Convair since 1982, has been with General Dynamics for 18 years.

Serving in the U.S. Air Force for six years, Ed spent most of that time in the Far East; Tucson, Arizona; and Strategic Air Command Headquarters in Omaha, Nebraska, where he resigned as a captain. His first year at General Dynamics was in the corporate intern program.

Ed's career then began with Convair as an industrial engineering supervisor in the Operations department, assigned to the DC-10 program. Ed later worked in Contracts & Estimating, where he held various positions before returning to Operations as director of Industrial Engineering, Scheduling, and Facility Planning.

In his new capacity, Ed will be responsible for the manufacturing and industrial engineering, producibility and manufacturing technology, and production and program support on all production programs at Space Systems. Ed succeeds Jack Coffman, former division vice president of Production.

Space Briefs

The anticipated announcement of the **MLV II** award is still May 3, at an AIAA luncheon in Washington, D.C. . . . Way to go Space Systems! Almost 350 people have preregistered to participate in **WalkAmerica** on Saturday. . . . The Material department Employee of the Month for January is **Randy Williams**, for February **Pat McGraw**, and for March **Darrell Stinson**. . . . Teamwork was the theme of the third annual **IRM offsite** held April 7. . . . Welcome to

Lee Patterson who joins the Space Systems Marketing team as manager of Energy Programs, and **Patrick King**, senior marketing rep for Manufacturing Technology. . . . **Susanna Bruno** was honored as the Human Resources Employee of the Quarter during the HR All-Hands luncheon at CRA. . . . **Bill Secrist** and **Jim Nunnally** join the Training & Development as the long-awaited technical skills trainers. . . . Space Systems Division **employment** for the week ending April 15 was 3,365.

Bulletin Board

April 22 - NMA Spring Fling. 7:00 to 12:00 p.m. at the Torrey Pines Inn.

April 23 - March of Dimes Walk America. Meet at 7:30 a.m. on Fiesta Island for group photo. Picnic held between 10:30 a.m. and 4:00 p.m. Wear your GD WalkAmerica T-shirt. There will be an alternate route in the event of rain, with credit given for 30 kilometers.

April 28 - SSD Secretaries Week Social at CRA for secretaries and management support. Be sure to invite your boss! RSVP to Lisa Lawrence at 77833.

April 30 - CRA Scuba Club 8th Annual Diver's Day. 9 a.m. to 4 p.m. in the CRA parking lot. Dive gear swap meet, store sales, demo's, lectures, and barbeque. All are welcome.

May 14 & 15 and May 21 & 22 - Air/Space America, an international electronics and aerospace trade exposition at Brown Field. Discount tickets for GD employees available at CRA (\$6.00 adults, \$ 3.00 children.)

May 11 - NMA Corporate Night with Herb Rogers.



Ribbon cutting ceremonies for the official opening of the Space Systems Mail & Distribution Center were held last week with Dick Hora, director of Planning & Administration, presiding. The new center is located in Kearny Mesa's building 26, in the southeast corner of the first floor, and can be reach at 39009. From left are: Frank Maxfield—manager of Information Resource Management, Barb Oliver—chief of Information Resource Management, Doug Zink, Dick Hora, Yovone Perez, Steve Hajduk, and Mike Washington. Not pictured is Dorothy Hobson.

Plant Services Bus Schedule

Since our facilities are spread out in the San Diego area, transportation to and from other locations is an important issue. The General Dynamics Transportation department has revised its bus schedule to meet employee needs and encourage bus transportation. If you have any doubts about riding the bus, you should first know that all buses are air-conditioned and that the high back seats make for a comfortable bus ride. Questions can be directed to the dispatcher at 75800 or 28261.

KM = Kearny Mesa, Bldg 5, NW corner
LF = Lindbergh Field, Bldg 5, NW corner
VP = Viewpoint Plaza in front of Building 2
CP = Century Park in front of Building 3
AF19 = Air Force Plant 19, Bldg 2, NW corner

Depart: KM to LF via VP, CP, AF19
Times: 7:00am, 8:30, 10:10, 12:20pm, 2:00

Depart: VP to LF via CP, AF19
Times: 7:10am, 8:40, 10:20, 12:25pm, 2:10

Depart: CP to LF via AF19
Times: 7:15am, 8:50, 10:30, 12:35pm, 2:20

Depart: AF19 to LF
Times: 7:35am, 9:05, 10:45, 12:55pm, 2:35

Depart: LF to KM via AF19, VP, CP
Times: 7:50am, 9:30, 11:30, 1:05pm, 2:50

Depart: AF19 to KM via VP, CP
Times: 7:55am, 9:40, 11:40, 1:10pm, 3:00

Depart: VP to KM via CP
Times: 8:15am, 9:55, 12:00pm, 1:30, 3:15

Depart: CP to KM
Times: 8:25am, 10:05, 12:10pm, 1:40, 3:25



The purpose of *Space Systems Division Orbiteer* is to report the way employees — like Doris Raaberg, senior staff secretary — work together, to show the superior products they produce, and to share newsworthy information about events in Space Systems Division.

Doris began her career as a department clerk in engineering test equipment in 1958. Long ago, Doris set her sights on being a staff secretary, and she's proud to have reached that goal. As the secretary to Dr. Alan Lovelace, vice president and general manager, she claims "it's an exciting, interesting job, with never a dull day."

She said of the upcoming Space Systems Secretaries Week activities, "this is an excellent opportunity for secretaries and management support to participate in some communication and teambuilding activities."

Doris is the mother of six children and grandmother to seven. Her husband, Bud, recently retired from General Dynamics. Her favorite hobby is reading.

Space Systems Division Orbiteer is published every other Friday. Items of interest to readers should be addressed to *Orbiteer*, Mail Zone C2-7145 (Post Office Box 85990, San Diego, CA 92138). Telephone (619) 547-7312.

Linda Loffredo, Editor

ORBITER

GENERAL DYNAMICS SPACE SYSTEMS DIVISION

May 6, 1988

Space Systems Wins MLV II Competition!

In an announcement that brought ecstatic and enthusiastic reactions from Space Systems employees from coast to coast, the U.S. Air Force announced on Tuesday, May 3, that General Dynamics Space Systems had won the Medium Launch Vehicle II (MLV II) contract.

The contract will provide the means for launching the Defense Satellite Communication System payloads and a Space Test Program satellite.

"This is a significant program win for our division," said Dr. Alan Lovelace, General Manager and Vice President. "I'm very happy for the General Dynamics team. My congratulations and thanks to all the people who worked so hard to make this happen. That team includes the field offices, the Washington D.C. office, corporate headquarters, and of course all the folks in San Diego."

"This is the opportunity we've been waiting for," continued Dr. Lovelace, "the opportunity to demonstrate that Space Systems can deliver reliable launch vehicles well into the next decade."

The contract with General Dynamics will be signed as soon as Congress releases the funds already appropriated for the MLV II. The details of the winning contract will be provided at that time. Edward C. "Pete" Aldridge Jr., Secretary of the Air Force, said in his announcement that they were impressed with the launch cost reduction, guaranteed reflight provisions and the commercialization aspects of this competition process.

"The eleven MLV II vehicles satisfy another payload weight class requirement. These vehicles will be able to launch payloads in the 6,000-pound class, which are larger than the current



Surrounded by jubilant colleagues, Bill Phillip - director of the Atlas/Centaur and Atlas Programs, cheer the MLV II win announcement made on Tuesday.

Delta II can accommodate. With this selection, we will develop the full range of capabilities we need to provide launch services for both government and commercial users," said Aldridge.

The research and development to support the production, test, integration, launch support and launch operations of MLVs will be accomplished under the contract. This is a new approach to contracting as the Air Force is buying a complete launch package from Space Systems, not just a launch vehicle.

The need for an MLV II launch system was defined in late 1987. Department of Defense payloads were

removed from the Space Shuttle launch manifest in the wake of the Challenger disaster. The payloads that will fly on MLV II are the Defense Satellite Communications Systems (DSCS) III B, first scheduled for launch in January 1991. An experimental payload is scheduled to launch in 1994.

The General Dynamics team consists of Space Systems, Rocketdyne Division of Rockwell International (Canoga Park, CA), Honeywell Space and Strategic Systems Division (Clearwater, FL), Pratt and Whitney Aircraft Co. (West Palm Beach, FL) and Gulton Electronics Co. (Albuquerque, NM).

Elaine Bergman: Aiming for the Olympics



Elaine Bergman has been training in track and field for only a year and a half. Already she is a nationally ranked heptathlete who is very close to qualifying for this year's Olympics in Seoul, Korea.

Serving as a counterpart to the men's decathlon, the heptathlon competition consists of seven events: 100-meter hurdles, high jump, shot put, 200-meter sprint, long jump, javelin, and an 800-meter run. Four events are completed in the first day and three on the second day, with a half-hour break between events.

Usually twelve to sixteen women meet the initial qualification to represent the United States at the Olympics in this event. Finalists must attain 5,425 points by the end of June to qualify; Elaine has 5,200 points. The Olympic trials in July will narrow the competition down to three finalists.

Elaine's inspiration to compete in the heptathlon came while on an educational leave of absence to obtain a master's degree in business. It was 11 months ago when she won the state championship in Sacramento representing a local community college. Realizing that her natural talent coupled with the proper training and personal dedication could help her reach national-level competition, she continued a vigorous training program.

"The discipline and personal drive required to be an heptathlete," she stated, "flow over and are reflected in all aspects of my life, an added benefit to my work, training, and competition."

As a liaison engineer in department 854-0, Elaine provides engineering support to the fabrication process for the Titan/Centaur and Atlas/Centaur programs. She investigates problem areas, such as damaged hardware or engineering blueprint errors, and determines a solution through coordination with all of the affected departments. She is also assisting with the Harlingen facility start-up efforts.

Elaine's next heptathlon competition is at Cal State Los Angeles on May 27. We're proud of her accomplishments and wish her the very best in her bid for the Olympics.

Stay Tuned for "Pioneers of the High Frontier"

The fourth teleconference in the educational series "Pioneers of the High Frontier" will be broadcast on Thursday, May 12 from 9:00 to 10:30 a.m. An in-studio panel of eleven students representing grades 5 through 12 will moderate a discussion about the past, present, and future of aviation. The panel will also discuss the latest report from the National Commission on Space.

Responding to questions from classrooms across America is a distinguished panel of guests that represent three generations of jet pilots. They are Brig. General Charles Yeager, USAF (Ret.); Commander Randy (Duke) Cunningham, USN (Ret.); and Captain Deborah LaFrombois, USAF.

The program can be seen live on Channel 11 and cable stations Westar 4 and Transponder 6 (D). The teleconference will also be taped and made available to local schools upon request and to employees for checkout.

These educational teleconferences have been made possible through a grant from Space Systems. The program is being sponsored by the Challenger Center for Space Science Education, Air/Space America '88, San Diego City Schools, and the San Diego Office of Education. Questions about the teleconference can be referred to Dick Neal, 77447.

GD Tops Pledge List

General Dynamics was the top fundraiser at San Diego's WalkAmerica, with total pledges coming to \$56,000 from over 700 walkers. The event generated \$425,000 in pledges, up from \$380,000 last year.

Over 5,400 San Diegans walked some or all of the 18.5-mile route around Mission Bay, through Pacific Beach, Mission Beach and along the ocean boardwalk to raise money for the event.

The next step is for walkers to collect pledge monies from sponsors. Those who turn in 100% of pledge monies to the March of Dimes by May 15 will have their name entered into a drawing for a one-week vacation for two to their choice of Hawaii or Puerto Vallarta.

Special thanks to the Space Systems employees who served as WalkAmerica team leaders: Geoff Apthorp, Paul Neimann, Deb Kania, Leslie Bakker, Ron Eckberg, Jackie Barrington, Joy Gorbach, Pete Munoz, Nancy Linstead, and especially to our division coordinator, Julie Lawrence.

Thanks to all the General Dynamics walkers, sponsors, and volunteers who helped make WalkAmerica '88 such a success.

Service Awards Notice

General Dynamics Corporate Office recently announced changes in the Service Awards Program. The new program includes upgraded awards and an expanded selection list for employees.

Unfortunately, implementation of the new program has been delayed. Many employees celebrating a service anniversary (5, 10, 15 years, etc.) so far in 1988 have not been notified for their award selection. This is a regrettable delay. However, full implementation of the new Service Awards Program will take place in the second quarter of this year so that all service recognition in 1988 can be realized.

We know that our employees' valued service is the company's greatest asset. Your patience during this delay is appreciated.

Employee Benefits Office

5/6/88

Air/Space America Takes Off in San Diego

One of the most spectacular air shows ever presented on the West Coast is set for May 13 - 22 when Air/Space America takes off at Brown Field in southeast San Diego. The international electronics and aerospace trade exposition is the largest attempted in the United States, expecting to draw a crowd of 100,000 government and corporate officials from all over the world for the trade show, and another 400,000 spectators at the airshow.

The U.S. Air Force Thunderbirds take off in their General Dynamics Fort Worth-built F-16s for a first-time-ever appearance in San Diego on May 21 & 22. Four Convair-built F-106s about to be retired from the Air National Guard will be on display, along with an F-16N from Miramar Naval Air Station, which is used as an adversary aircraft in the Navy's "Top Gun" school. Also on display at Brown Field will be an F-14, F-15, F/A-18, B-1B, SR-71 "Blackbird," and a Concorde.

General Dynamics is one of seven corporate founders of Air/Space America.

As such, all six aerospace divisions (Space Systems, Convair, Electronics, Valley Systems, Pomona, and Fort Worth) plan to have their products or models on display in the General Dynamics exhibit, which will be a major show exhibit. Spectators can expect to see airshows, races, flight demonstrations, and static and flying displays, plus indoor and outdoor exhibits. Many U.S. military aircraft never before exhibited publicly will be making demonstration flights or will be shown on the giant television screens at the exposition site.

Several Space Systems employees will participate in the Air/Space America Symposium during the week:

Clyde Wiley will chair the Sensors & Cryogenics session on May 17. The Space Structures session will be chaired by Doug Armstrong on May 18. Dr. Bruce Cordell will make a presentation on "The Exploration of Mars" at the Projects for the Future in Space session on May 19.

Those Space Systems employees who hold a security clearance and are actively involved with the planning or implementation of activities at Air/Space America must receive a defense security briefing prior to attending. Since there will be foreign presence at this event, it is imperative that these employees be briefed on security risks and precautions. Also, any employee who has a questionable or suspicious contact with a foreign representative should contact us. Space Systems Industrial Security can be reached at 75325 to make the necessary security briefing arrangements.

Air/Space America will be open to the public on the weekends of May 14 & 15 and May 21 & 22. Discount tickets for General Dynamics employees are on sale at CRA. The cost for adults is \$6 and for children is \$3.



At a recent service awards breakfast, Vice President & General Manager Dr. Alan Lovelace recognized employees for 35, 40, and 45 years of service. Attending the breakfast were (front row, from left) Helen Miller (35), Harold Davis (35), John Ascencio (35), Ed Jaeschke (35), Andre Couillard (35), Mary Lou Stone (35), and Frank Hinton (35). (Back row, from left) Dr. Alan Lovelace, Ed Squires (staff), Carvel Mair (35), Emil Franke (40), Ed Ford (35), Don Moore (staff), Ron Stoneburner (staff), Jim Rice (45) and Marty Winkler (staff). Not shown are Lester Marr (40), Jack Gage (35), and Walter Duzyk (35).

Space Briefs

It's OK to be ahead of schedule, says Russ Thomas, vice president of the Titan/Centaur program. That's why he sponsored a thank-you party for the Material department when they met the Titan/Centaur procurement commitment ahead of time. . . . Happy centennial to the International Association of Machinists & Aerospace Workers. IAM members Myriene Cook-Molitor, Judy Lamb, Sharon McCarney, and Mike Capossere attended the anniversary convention in Atlanta, Georgia last week. . . . One hundred twenty engineers received tickets to the April 22 Padres Game in appreciation for their work on the Titan/Centaur critical design review. . . . Seminars and special programs held for Secretaries Week were a big hit, as was the social at CRA for secretaries, management support and their bosses. . . . Space Systems employment for the week ending April 22 was 3,387.

Herb Rogers, President of General Dynamics Corporation **"Speaking of Bright Futures. . ."**

All Space Systems employees are invited to attend the NMA Corporate Night dinner meeting. Mr. Herbert F. Rogers, president and chief operating officer of General Dynamics Corporation, will be the guest speaker.

This will be the first occasion for our new president to address a division of General Dynamics. Space Systems is pleased to have been selected for his initial address.

He plans to talk about the future of Space Systems and the Corporation.

Herb Rogers joined General Dynamics as a design engineer at Fort Worth in 1949, holding aerospace engineering and program management positions with both the Fort Worth and Convair divisions. He received a bachelor of science degree in Aeronautical Engineering from Purdue University in 1949, and in 1979 was awarded an honorary Doctor of Engineering degree from Purdue.

"Herb Rogers has demonstrated his

strong leadership, management and technical skills during a 38-year career with General Dynamics," said Stanley C. Pace, Chairman and Chief Executive Officer. "He will be able to put these skills to full use as president and chief operating officer."

The May 10 dinner meeting will be hosted by Roy Bennett, division vice president of Material.

The event will be held at the new San Diego Marriott Hotel (formerly the Hotel Inter-Continental). Cocktail hour begins at 6:00 p.m.; dinner will be served at 7:15 p.m.

Diners will have a choice of prime rib or swordfish as an entree. The reduced price of \$9.00 for members and \$12.00 for nonmembers includes parking, hors d'oeuvres, and a special toast. Purchase tickets from an NMA booster, and ask him or her for details about the scholarship and door prizes.



Welcome to the staff of Graphic Copier Services, a new Space Systems department as of April 18. From left are Michael Gass—Facility Services manager, Chuck Taylor—Plant Services general supervisor, Mary Piper Jones, Rae Baum, Eulah Marshall, Toni Griffith, and John Sode. Not shown is Gary Rowe—Plant Services chief.

Meeting most division copying needs, the two Graphic Copier Service centers are located at Kearny Mesa Building 26, center aisle on the first floor (column E-13), and Century Park Building 1, on the west side of the first floor.

Large reproduction jobs (i.e. blueprint copying, photo lab, microfilm work, etc.) are still being done at Convair's Graphic Reproduction. Daily deliveries from Graphic Reproduction to both Space Systems Graphic Copier Service centers is available. Schedules are posted in the centers. Call 75882 for assistance.



The purpose of *Space Systems Division Orbiteer* is to report the way employees—like Richard Rico, fabrication and assembly inspection group leader—work together, to show the superior products they produce, and to share newsworthy information about events affecting Space Systems Division.

Richard was inspecting the transition skin of the Titan/Centaur when we talked to him. In fact, Richard checks most items at Air Force Plant 19 that go on the Titan/Centaur to assure that assemblies meet blueprint requirements.

These inspections can be very complicated, since each unit is unique and may be designed for different purposes. Since the efforts of many other areas come together on the factory floor, Richard must interface with many disciplines, including the material review board, engineering, and the customer to assure that everything is A-OK.

Because of his knowledge and expertise in quality assurance, Richard is key to the training of new inspectors. We agree with his supervisor Ron Meier that we're very lucky to have Richard as part of the Space Systems team.

Richard and his wife Marie have four children, three of whom are still in school. He enjoys a regular exercise program and an occasional movie with his family.

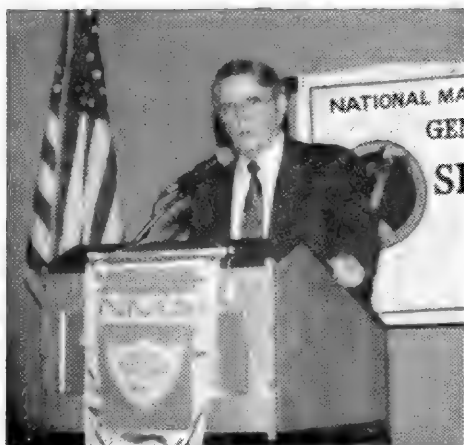
Space Systems Division Orbiteer is published every other Friday. Items of interest to readers should be addressed to *Orbiteer*, Mail Zone C2-7145 (Post Office Box 85990, San Diego, CA 92138.) Telephone (619) 547-7312.

Linda Loffredo, Editor



May 20, 1988

Herb Rogers, President of General Dynamics: **"Space Systems' Future Is Now"**



Speaking at the National Management Association dinner meeting on May 10, Herb Rogers dubbed the evening "the second victory celebration for the MLV II win." Over 800 Space Systems employees and guests gathered at the Marriott Hotel to hear the president and chief operating officer of General Dynamics Corporation.

In a speech often interrupted by applause, Herb Rogers discussed the corporation's plan and commitment to Space Systems.

"Our heritage can be seen in over 30 years of experience in the space business" he said. "The corporation's plan is to restore Space Systems as a first-class, premier expendable launch vehicle company."

Talking about MLV II, he said that we couldn't have planned it better, that in fact, the business wasn't even in the original strategic plan. "But success," he said, "is measured in great part by the ability to take advantage of opportunities as they present themselves, such as this."

Rogers continued on to say that we had carved out a very important niche in the expendable launch vehicle world. The evolution of the Atlas/Centaur family to the Atlas I, Atlas II, and Atlas IIA,

effectively covers the spectrum of 4000 to 6400 pounds to geosynchronous transfer orbit. A carefully selected business base in both the commercial and military world will continue to provide excellent opportunities.

"Last year, the corporation took a big gamble with Space Systems," he said. "We decided to build 18 Atlas vehicles for the commercial market. This \$125 million commitment was made before we had any contracts for a commercial launch vehicle. Today, we've sold four vehicles with four

options. I'd say it was a good investment."

He talked about the reorganization of the aerospace functions. No longer do Space Systems and Fort Worth fall within that group. The space and aircraft programs now report directly to him.

Rogers concluded his speech with one final thought, "Don't get captivated with the future because the future is now. By doing a good job today, our Atlas family will have solid business potential well beyond 1996."



The live interactive broadcast of the Space Systems-sponsored teleconference in KPBS studios at San Diego State University.

'Pioneers of the High Frontier' Teleconference

School children from San Diego and from across America had the unique opportunity to question three of the best jet pilots in our country: Brigadier General Charles (Chuck) Yeager, USAF (Ret.), Commander Randy (Duke) Cunningham (Ret.), and Captain Deborah LaFrombois. The fourth teleconference in the educational series "Pioneers of the High Frontier - Mach 1 and Beyond" was

filmed on May 12 at KPBS studios.

Joshua Keller, a junior at La Jolla High School, moderated a ten-member panel of students and fielded questions phoned in from as far away as Vermont. It was obvious that all the students, grades five through twelve, had done their homework in preparation for this event.

Chuck Yeager was the first man to fly faster than the speed of sound. He

Continued on page 4

Celebrating the Win of MLV II



Following the contract award announcement made at the AIAA luncheon in Washington, D.C. on May 3, members of the Lift & Space Transportation Committee pause for a moment. From left are Courtney Stadd, Rear Admiral Richard Truly, The Honorable Edward Aldridge, Jr., and Dr. Alan Lovelace.



Making the final touches on Tuesday afternoon to the General Dynamics Space Systems AIAA exhibit in Washington, D.C., are Scott Crist, Barbara Freeman, and Fred Farmer.



Under heated tents at CRA Missile Park, employees enjoyed the fresh strawberry dessert and listened to the music of Stu's Crew Dixieland Band.



A crowd of 3,300 people feasted on a delicious meal at CRA Missile Park in San Diego on Thursday, May 5.



John & Elaine Schnabel join their peers from the Eastern Space & Missile Center at the Cape Winds Resort on May 7, with food, drinks, and a great big MLV II win cake.



Children of Space Systems employees joined their families in celebrating the win, too!

Compliments From DIS

Five members of the Defense Investigative Service conducted an on-site facility inspection during March. Leading the inspection were Steve Lewis, DIS Field Office Chief, and Linda Fleming, DIS Inspection Team Chief.

Closing remarks made during the outbrief meeting with division staff members were positive and complimentary to the industrial security at Space Systems. Mr. Lewis stated that "employee interviews reflected a well run and effective security education and awareness program." They were especially impressed with our computerized document control system.

Although deficiencies were cited during the five day inspection, they were noted as being individual problems rather than systematic ones.

Ron Davis, manager of Industrial Security, was very pleased with the outcome of the inspection and proud of the hard work by employees, security representatives, and the Industrial Security staff to ensure such positive results from this government inspection.

Susan Stoffel: Top Fund Raiser



Susan displays the nine WalkAmerica sponsor sheets that she had completely filled with sponsors.

Material analyst Susan Stoffel became the top fund raiser for Space Systems by collecting \$1,144 in pledges for this year's March of Dimes WalkAmerica. This is her third year of participation. She exceeded the \$1,000 fund-raising goal she initially set for herself.

General Dynamics' goal is to have 100% of our pledges turned in by May 31. Susan had 172 sponsors, and has collected pledges from 160 so far. Let's join in on Susan's efforts to collect pledges so that General Dynamics can contribute 100% to this worthwhile cause.

First Quarter Financial Report

by Charlie Lloyd, Division Vice President & Controller

Beginning with this issue of the *Orbiteer*, we are planning to present financial results on a quarterly basis to our employees. We believe that this information will enable each of you to better understand business events that affect our division.

Key financial results for Space Systems in the first quarter 1988 are as follows:

Sales	\$55.8M
Net Earnings (Loss)	(4.6)M
Pretax Funds Generated (Used)	(14.0)M
Indirect Costs	28.9M

The \$55.8 million in sales primarily reflect the continued build-up of the Titan/Centaur program. The \$4.6 million net loss reflects the research & development costs being written off as incurred against the Commercial Atlas program. The \$14 million of pretax funds used reflects the cash flow requirements for the Titan/Centaur and Commercial Atlas programs. This also indicates the significant capital investments being made, such as the new manufacturing facility in building five. Our indirect costs of \$28.9 million are somewhat better than our operating plan.

A New Twist to Employee Recognition

Employees can now be rewarded for their extra effort and hard work in an instant — an "Instant Recognition Award" that is. The Pacesetter Recognition programs had not formerly addressed this issue.

The new twist to the current Pacesetter Recognition program is that it provides a way to show appreciation to employees with Padre tickets for their extra effort.

Significant and important employee efforts, not necessarily tied to a major task or milestone, can now be recognized instantly. Supervisors need to provide minimal justification for award-level determination to make this recognition possible. Padre tickets are, of course, limited by requests and game schedule.

Already, employees are benefitting from this new award. Mechanical engineer Kevin Guy received Padre tickets for that very evening from supervisor Ron Eckberg for his work on the Optimized Forward Adapter Study.

Bill Phillipp Named Vice President

Bill Phillipp was promoted to Division Vice President and Program Director of Medium Launch Systems.



In this position, Bill is responsible for the overall program management of the Atlas E/J and Atlas/Centaur programs. His duties will include the development and production of the Atlas I and Atlas II vehicles. He will manage base operations for Atlas launches at Vandenberg Air Force Base and Atlas/Centaur launches at the Eastern Space & Missile Center.

Bill has been with General Dynamics since 1956. His vehicle launch experience comes from a total of fifteen years spent at Cape Canaveral. In 1976, Bill was the director of Test & Evaluation. He served as program director for Atlas E and H in 1983. Six months ago, he became program director of the Atlas/Centaur and Atlas programs.

Bill received a bachelor of science in electrical engineering from the Indiana Institute of Technology. He also studied business management at Florida State University.

Jim Heffron becomes the new program director of Atlas I and Atlas II programs.

Space Briefs

Congratulations to Sam Wagner, Contracts & Estimating Employee of the Quarter. . . A 25 member Congressional delegation attended briefings and toured our facilities on May 13, prior to opening day ceremonies at Air/Space America. . . Welcome to Joy Peery and Dianne Torrance in Marketing Communications Proposal Development. . . Ron Davis has been selected to head up security for Sail America. . . Quality Assurance Employee of the Month for January is Domingo J. Barba, for February is Kimberly Morales, and for March is Helen Gallant. . . Several courtyards in Kearny Mesa's Building 4 are taking on a new look, thanks to funding from our Facilities department. . . For the week ending May 13, Space Systems employment is 3,438.

Teleconference continued from page 1
continues to set records in the world of aviation. He talked about his sense of duty while in the Air Force to protect and defend the country. General Yeager's comments about aviation history beginning with the propeller driven planes, to the ease of flying jet engine planes, to the futuristic aerospace plane provided good insight for the students.

Duke Cunningham was one of the first students, and later an instructor, at the Miramar Naval Air Station Top Gun school. While telling of experiences in air-to-air combat, he stressed that the proper training, teamwork, and dedication were key elements of his success.

Deborah LaFrombois was one of the first women to graduate from the U.S. Air Force Academy. She was selected as an instructor pilot for the supersonic T-38. Now assigned to Norton Air Force Base flying the C-141, she talked about the rising number of women in aviation and the thrill of flying at Mach 1 and beyond.

This educational teleconference was made possible through a grant from Space Systems. Employees are welcome to watch any of the four educational videos from this series at home by checking them out through the guard's desk in Century Park building two. Questions can be referred to Dick Neal, 77447.

Health & Safety Notebook

- All cigarette vending machines will be removed from company premises on July 1, as General Dynamics Corporation continues to move toward a smoke-free work environment for employees.
- For the safety of pedestrians, the General Safety Committee asks that those people operating mechanical vehicles avoid using the sidewalks. Please use the designated roadways to ensure everyone's safety.

Leave Word You're Calling

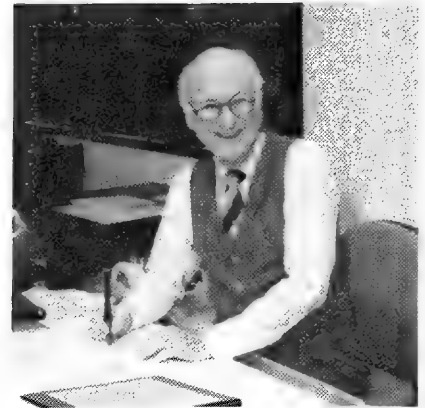
Tired of not being able to reach people via the telephone? Try the *6, or leave word calling feature. It is part of the new, million-dollar telephone system installed last year by AT&T, called System 85.

It's easy to use. Simply hang up when no one answers your call. Pick up the phone, dial *6 plus *their* five-digit extension. Then if you hear three beeps, that phone is programmed with this feature. The person you called will see a flashing red light of the telephone upon his or her return. They will be able to retrieve your name, number, and the exact time that you called. If you try this and get a

Continued next column

siren tone, it means that particular telephone has not been programmed with this feature.

Look for more helpful hints and additional training classes from Telecommunications, a department of Information Resource Management.



The purpose of *Space Systems Division Orbiteer* is to report the way employees — like George Paul, senior graphic designer — work together, to show the superior products they produce, and to share newsworthy information about events affecting Space Systems.

George has been a graphic designer at General Dynamics for 31 years. With a creative flair, a keen eye for perfection, and a positive attitude, he has contributed a great deal of time and talent to many graphic arts projects over the years.

He works for the new Graphic Services department located at Viewpoint Plaza. They offer the editing, design, and production of presentations, brochures, technical papers and proposals for Space Systems employees.

A native Californian, he recalls that his grandparents came to El Cajon in 1892 from Scotland. George has four children, all of whom are talented artists also.

Exciting vacation plans are under way for George. He will make his fourth attempt to ascend Mt. Whitney, which sits 14,500 feet above sea level, from the west. Meanwhile George, enjoy your adventures this fall in the Grand Canyon!

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Linda Loffredo, Editor

WANG Center On Line



WANG Center employees from left are Mary Rameson, Jerrie Sutherland, and Cindy West.

Information Resource Management (IRM) has just opened a WANG Word Processing Center in Century Park. Most word processing tasks submitted along with appropriate charge numbers can now

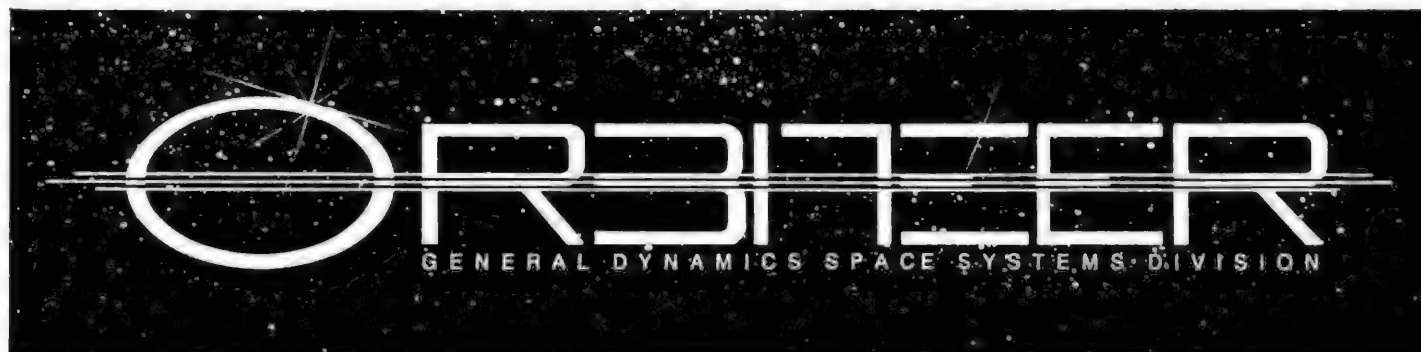
be performed on these computer systems, providing top quality service and products.

IRM is investigating a hardware and software configuration that will enable the transfer of electronic data from one computer environment to another while retaining the enhancements (format, tabs, underscores, etc.) that it was created with.

When this configuration is in place, the IRM WANG Center will have the capability of transporting data to and from the Decmate, most company PCs like the MacIntosh and AT&T, as well as the Electronic Mail & Office Systems (EMOS) Network.

The Titan/Centaur program has its own WANG Center, located in Century Park, building two.

The new IRM WANG Center is on the first floor of Century Park, building three. Staffing the center are Cindy West, Mary Rameson, and Jerrie Sutherland. Call 77354 or 77513 for more information.



June 3, 1988

GOES Contract Signed with NASA

National Aeronautics & Space Administration (NASA) and the U.S. Department of Commerce awarded a firm, fixed-price \$200,236,553 contract to Space Systems for expendable launch vehicle (ELV) transportation services for the National Oceanic and Atmospheric Administration (NOAA). The contract was officially signed on May 20. We will supply Atlas I launch transportation services for NOAA's new family of Geostationary Operational Environmental Satellites (GOES) I, J, and K, with an option for GOES L and M.

Consistent with the provisions of President Reagan's national space policy, this contract is the first government procurement of commercial launch transportation services. It ushers in a new era in the commercialization of space.

This contract marks the first time in which a commercial contractor will assume systems performance responsibility for *overall* program and subcontractor management. That includes the vehicle design, production, testing, vehicle-to-payload integration, mission integration, launch services, system effectiveness, overall launch vehicle performance, and mission success.

GOES spacecraft provide critical data needed on a routine basis for weather forecasting. They provide near-continuous, high-resolution visible and infrared imaging of weather systems over

large areas of the earth. They are especially valuable in identifying hurricanes and other major storms at an early stage. The GOES spacecraft scheduled for launch are urgently needed to ensure continuous weather coverage, since the useful life of current satellites in orbit are approaching an end.

Scheduled launches of GOES I and J are for March and December 1990, and May 1992 for GOES K. The two options are tentatively scheduled for launch in 1995.

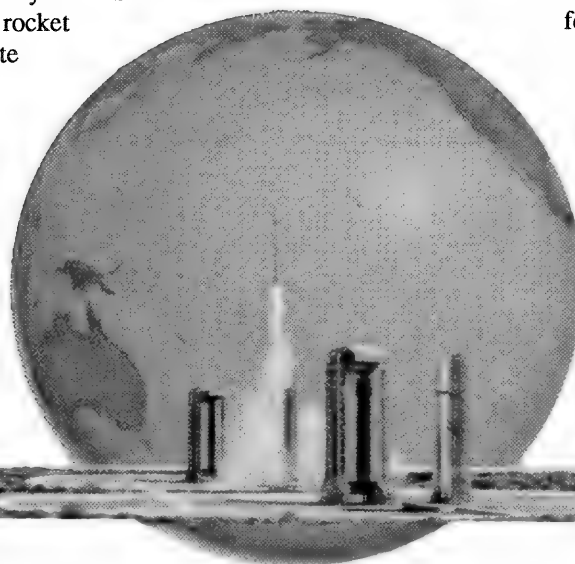
Don Charhut, director of mission development for Commercial Launch Services, led the proposal efforts associated with GOES. "This is a significant win for us. We were the successful competitors against Martin Marietta here, and combined with our EUTELSAT win last year, we have become a solid, viable competitor of launch services worldwide," he said. CLS will manage the contract. (Four of the 18 commercial launch vehicles we are building have now been sold.)

While price and scheduling factors figured heavily in NASA's choice of a rocket for a satellite

launch, Don explained, a complex risk factor was also considered. With all other factors being equal, the Atlas package offered two important advantages: The medium-size vehicle carries one payload, therefore optimizing the mission design. The second advantage is the availability of two launch pads at Cape Canaveral, allowing one pad each for commercial and military missions while providing backup capability for both.

The timeframe surrounding the GOES win from selection to contract signing was longer than usual (over one year versus the average nine months). This was due in large part to the thorough review of government regulations in determining their applicability to the commercial launch service business.

Lewis Research Center in Cleveland, Ohio, will manage the NASA contract. "Our working relationship with Lewis Research Center will change," said Andy Calimbas, GOES mission program manager. "They will take on the role of monitoring the project, whereas before they directed our activity. That's part of this new contract: complete service for the overall program management."





Jerry and Rose Dillon, Bob Supergan - facilities buyer, and Pat McGraw enjoy the awards luncheon celebrating Small Business week.

Small Business Supplier Recognized

Some 60 companies were recognized at the Greater San Diego Chamber of Commerce and Small Business Administration annual luncheon on May 5. Space Systems recognized Mid Mark Distributors as our 1987 Small Business Supplier of the Year.

Jerry and Rose Dillon are co-owners of Mid Mark Distributors. They supply industrial equipment to the government and military contractors.

According to Pat McGraw, a Small Business administrator in the Material department, their continued support and performance on subcontracts were key factors to the award. Guidelines for the selection were based on suppliers' performance to the contract specifications, the timeliness of deliveries, and the quality of the product. Space Systems is recognizing small business suppliers quarterly during 1988.

Tribute to Women and Industry Nancy Kuhn, Recipient

Nancy Kuhn attended the annual YWCA Tribute to Women and Industry ceremony as Space Systems' 1987 TWIN honoree. Businesses throughout San Diego recognized 90 recipients of the award at the program held on June 2. The TWIN program honors women who have made significant contributions to their profession and the community, and recognizes companies who are committed to promoting qualified women in management and business. YWCA, sponsor of TWIN nationwide, began the program in San Diego in 1980.

Nancy is the chief of forecasting information systems in the Finance department. She is responsible for maintaining SIMS (Space Integrated Management Systems) and WAP (Work Authorization Plan) systems. Last year, her main task was the realignment of these financial systems from Convair to Space Systems. The development, recommendation and implementation of SIMS and WAP systems in Space Systems was successfully completed thanks to her expertise and leadership.

Attention, Graduates!

If you have, or will be receiving, a degree between January and June 1988 through the support of General Dynamics, please call Terri Wheeler at 77455. We will be arranging for a group photo and listing your degree in the next *Orbiteer*.

Retirees

Thanks and good luck to these Space Systems employees who recently retired:

- Bob Carsten**, AT&T Systems Technician assigned to General Dynamics for 20 years
- Lewis Fowler**, Engineering Specialist Senior, Structures & Mechanical Systems, 27 years
- Chester Kapalla**, Engineering Test Technician Senior, Engineering Administration, 35 years



Ed Squires speaking at the Air Force Plant 19 Appreciation Luncheon.

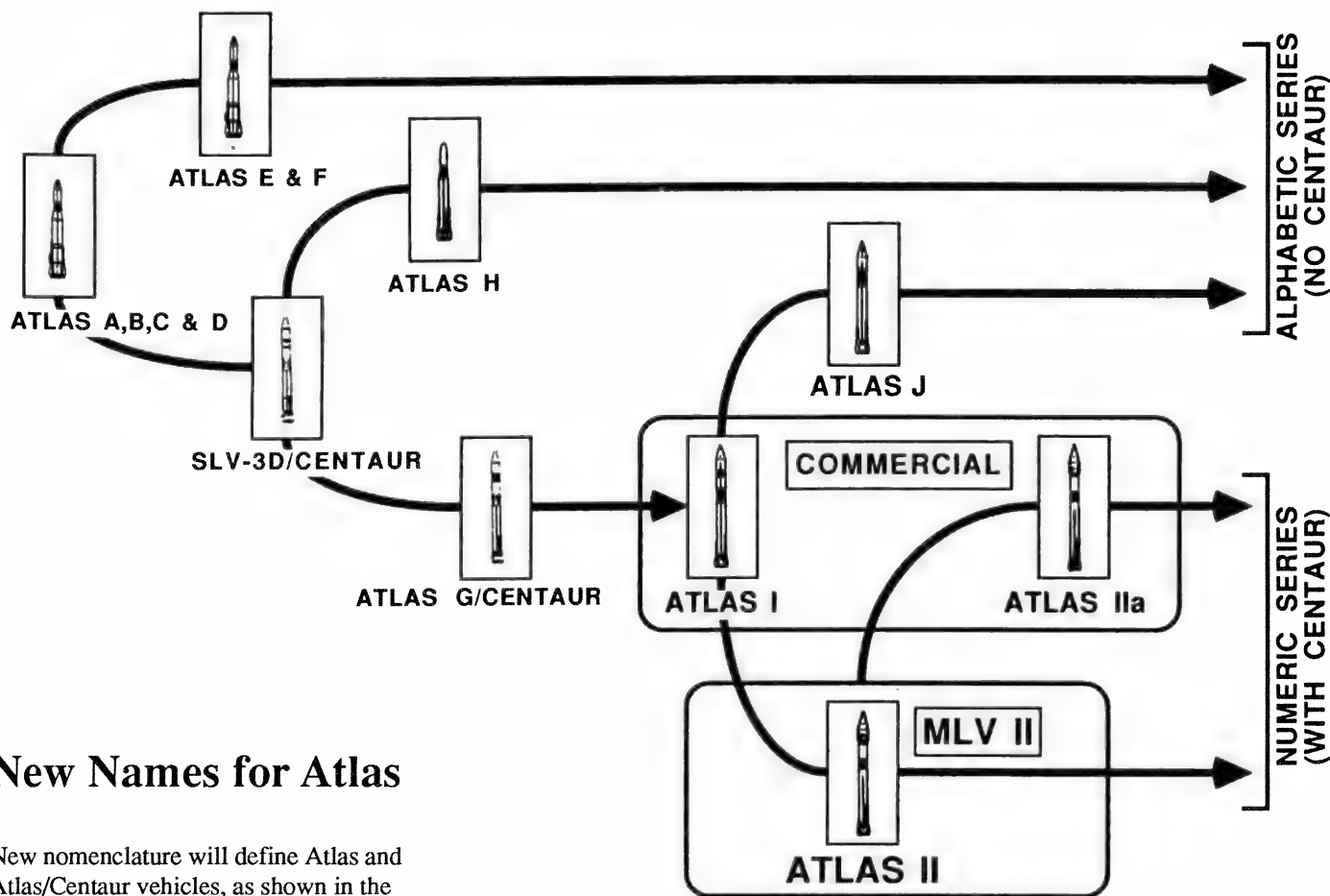
Plant 19 Takes on a New Look

Facility improvements at Air Force Plant 19 were the highlight of an Appreciation Luncheon on May 18, sponsored by Dr. Alan Lovelace, vice president and general manager. Nearly 200 employees at Plant 19 were invited to join in the day's activities.

Ed Squires, vice president of Production, thanked employees for bearing with the facility conditions

during the renovations. Improvements at Plant 19 included painting work areas and tools, restroom refurbishments, and the installation of a material center. Approximately \$1.5 million has been spent in upgrades so far this year. Additional expansion and improvements at Air Force Plant 19 are planned to support work for the recent Medium Launch Vehicle II award.

6/3/88



New Names for Atlas

New nomenclature will define Atlas and Atlas/Centaur vehicles, as shown in the above diagram.

Atlas vehicles without Centaur upper stages will continue with the naming convention of "Atlas" followed by an alphabetic qualifier based on configuration (for example, Atlas E).

Atlas vehicles incorporating a Centaur upper stage will now be designated "Atlas" followed by a roman numeral to differentiate configuration. Reference to Centaur in the name is to be dropped. The commercial vehicles will be known as Atlas I. The Medium Launch Vehicle II will be known as Atlas II. The currently planned commercial growth version will be known as Atlas IIA.

We are already using these vehicle names when referring to the Atlas family of vehicles. "Our consistency in this matter," said Dr. Lovelace, "is just one of the many steps toward establishing and maintaining credibility with the U.S. Air Force, NASA, and our commercial customers."

Space Briefs

Congratulations to our sister division, **Electronics**, selected as the second source producer for the U.S. Army's Single Channel Ground and Airborne Radio System (SINCGARS) program. . . Our division exceeded the 1988 **Con-Trib Campaign** goal of 75% with a 77% participation rate. . . The **Advanced Launch Systems Phase II** proposal was submitted on June 3. . . Congratulations to **Ed Bryant**, Quality Assurance Employee of the Month for April. . . We're not the only ones looking to the future: **Data Systems Division** has begun looking at software modifications needed to help computer systems denote the year 2000 and beyond. . . Research & Engineering is planning to purchase 62 **Computer-Aided Design (CAD)** stations by the end of this year. . . Hats off to **College Relations** for meeting and exceeding their 1988 hiring goal in May, a record breaking timeframe. . . Employees at the

Eastern Space & Missile Center wore red ribbons for a week in support of the community campaign, "Just Say No to Drugs". . . Congratulations to **Steve DeNato**, Material Employee of the Month for April, and to **Darrell Stinson**, Material Employee of the First Quarter. . . **Herb Rogers**, **Joe Doyle**, and the rest of the corporate team will be in town for the one-day **Management Effectiveness Review (MEP)** on June 14. . .

Marketing and Planning & Administration held the first of several joint off-site meetings on May 20. Their focus was on communication and strategy in reaching division goals. . . **Jerry Brown's** challenge to **Roy Bennett's** golf team proved fruitless, first because **Dick Hora's** team had the cup, second because the final count showed that Bennett's team was the actual winner, by one point. Better luck next time. . . **Space Systems employment** for the week ending May 20 was 3,466.

Get Your Friends in O.R.B.I.T.

The Space Systems employee referral program, "O.R.B.I.T., The Second Time Around," helps find and recruit qualified professionals needed to get our exciting programs off the ground. This is the perfect platform for telling your friends and associates about the opportunities available here.

Friends, classmates, former associates, or business acquaintances make excellent choices (however, current GD employees may not be referred.) If your qualified referral successfully completes a 90-day work period, you'll be eligible for a Merchandise Award Certificate from the Maritz Program.

Information brochures on the O.R.B.I.T. program have been placed at various locations around the plant facilities. Take a careful look at the program guidelines and the list of eligible positions. Questions can be referred to Professional Staffing at 77390.

Telephone Training

The Voice/Data Services of Information Resource Management again is offering training on multi-line digital telephones. Two-hour training sessions will be held on Tuesday, June 14, and Wednesday, June 15. The number of seats is limited, so call early to make reservations. Contact Debbi Broyles at 68886.

Employee Handbooks Out

Employees will be receiving the first edition of the Space Systems Employee Handbook next week. It is a handy reference guide for employees. You are encouraged to read the book and become familiar with its contents. We hope you find the Employee Handbook useful.

ORBITEER Distribution

Employees designated to pick up paychecks should also pick up *Space Systems Division Orbiteer*. Supervisors are asked to distribute the *Orbiteer* along with paychecks. Timeliness benefits all employees.

Working Group Meeting Expert System Maintenance & Diagnostic Aids

Space Systems will host the third annual corporatewide Expert System Maintenance and Diagnostic Aids Working Group meeting on June 22-23. This is a technical forum for the sharing and dissemination of knowledge and information related to research and development efforts in the areas of expert system-based maintenance and diagnostic aids. The agenda consists of presentations, demonstrations, and workshops over a two-day period.

The meeting will be held in the Presentation Room of Kearny Mesa's building two. It begins at 8:00 a.m. on Wednesday, June 22, and at 8:30 a.m. on Thursday, June 23. A no-host dinner will be held at the San Diego Marriott Marina Sea Grill Restaurant on June 22 for participants.

Contact Steve Harbater at 74610 to sign up or if you have any questions.

Families Sought to Host Students

High school students from Spain, Japan, Germany, Tahiti, New Zealand, and France will soon be arriving in the San Diego area for summer and school year programs. The sponsoring organization, Pacific Intercultural Exchange (PIE), is looking for caring families to host them.

The students are very anxious to share their cultural experiences with American families. Representatives from the Pacific Intercultural Exchange match students with host families by finding common interests, hobbies, and other lifestyle similarities.

PIE is a non-profit, San Diego-based student exchange organization that sponsors high school students from 16 countries for homestays ranging from three weeks to a full academic year. Students are between the ages of 15 and 20. They bring their own spending money and are fully insured.

General Dynamics families interested in hosting a PIE student or learning more about student exchange may call John Doty at 232-4199.



The purpose of *Space Systems Division Orbiteer* is to report the way employees — like Sheryl Squire, Material Control supervisor — work together, to show the superior products they produce, and to share newsworthy information about events affecting Space Systems.

Sheryl and her Material Controls group are responsible for ordering raw materials needed to build Atlas vehicles. They place purchase authorizations and subsequently ensure that all orders are legitimate program requirements. Their good ideas submitted through the Cost Reduction program have saved the company millions of dollars over the years.

"My job is very challenging, with a great deal of responsibility," she says. Her thorough understanding of the job comes from ten years' experience with General Dynamics, beginning with her first job — releasing shop orders on the factory floor.

Shopping ("born to shop"), reading, and aerobic dance are some of her favorite hobbies. An avid Lakers and Chicago Bears fan, she reads the daily sports section and the *Sports Illustrated* magazine. Sheryl believes that she's been blessed with a positive attitude. She displays that happiness and optimistic outlook on life in all that she does.

Sheryl has designed a Squire family tree that she will unveil over the 4th of July weekend at her family reunion in Cleveland, Ohio. Sheryl has researched her family back four generations.

Space Systems Division Orbiteer is published every other Friday. Items of interest to readers should be addressed to *Orbiteer*, Mail Zone C2-7145 (Post Office Box 86990, San Diego, CA 92138.) Telephone (619) 547-7312.

Linda Loffredo, Editor



June 17, 1988

photos by Dan Nash



Below: Team No. 1 had the best hardware proposal project. Standing from left are Gerry Szatkowski, Jim Witham, Chris Torre, Becky Vincent, and Mike Busley.



Above: Participants in the Program Managers' Seminar were (from back left) Mike Busley, Chris Torre, Jerry Brown (division staff), Mike Simon, Art Hale, David Sandsmark, Ed Jones, Ken Lejman, Rich Parker, Lorene De Huff, Rick Beach, Mark Sedillo, Marcus Adside, Jay Stoneburner, Frank Leinhaupel, and Jim Witham. (Front, from left) Michael Gruszczynski, Neal Hearn, Eddie Leung, Steve Klein, Celeste Salvaggio, Mike Kimmy, Victor Kandarpa, Gerry Szatkowski, Robert Johnson, Becky Vincent, and Andy Calimbas. Not pictured is Frank Hauser.

Program Managers' Seminar Preparation for the Future

The fourth Program Managers' Seminar at Space Systems was held June 8, 9, and 10. Twenty-seven employees attended the three-day program at the Rancho Bernardo Inn. The seminar was designed to provide a better understanding and increased knowledge of program management and its supporting elements.

Dr. Alan Lovelace and division staff members made presentations about the operating principles of functional areas and the interface with program managers. Topics covered engineering aspects of program management, communicating with the customer, program managers'

responsibilities, program management and production.

Participants worked in cross-functional teams during the seminar. Each team presented a hardware proposal to a Mock Source Selection Board made up of division staff members. This year, Marty Winkler, Jeff Irons, and Jerry Brown served on the board. Team members picked a topic from projects they are interested in or working on. This year's winner was Team No. 1, which offered a proposal to use a space station logistics carrier to deliver supplies and remove waste from the space station.

Ted LeFevre, former corporate vice president in charge of the Washington Office, was the guest speaker at the dinner session hosted by Dr. Lovelace. Ted talked about his 30-year career with General Dynamics. Having worked closely with House and Senate committee chairmen, senators, congressman, and U.S. presidents since Truman, Mr. LeFevre had many stories to tell. His advice to the participants: "Never stop selling your program."

The Program Managers' Seminar was created to provide talented personnel with exposure to what constitutes a good program manager and preparation for program management. Participants who graduate from these classes become eligible for the Corporate Program Managers' Seminar.

Understanding the Superconducting Super Collider

by Lee R. Patterson, marketing manager for Energy Programs

Superconducting Super Collider is an ambitious project to build the world's largest "atom smasher" here in the United States. SSC is a proton-proton synchrotron, which means it will consist of two counter-rotating beams of protons whirling around a 53-mile-circumference racetrack at speeds reaching nearly that of light. At certain points on the racetrack, the opposing beams of proton are allowed to collide, causing a shower of subatomic particles. Using sophisticated computers, scientists will record the millions of collisions that occur during a typical run. The Super Collider, because of its order-of-magnitude increase in colliding power over existing synchrotrons, will produce particles of matter *smaller than those currently known to exist*. Scientists theorize that such particles will form a more fundamental substructure of matter. Super Collider will be the research tool used to unravel these theories, which directly relate to the "big bang" theory of the formation of the universe. In short, SSC will help us understand what our world is made of and how it works.

To keep the highly energetic protons on their curved path around the Super Collider ring, high-power superconducting magnets will be used to steer the proton beams. SSC will require 7,620 dipole magnets to curve the flight of the protons. Additional specialty magnets bring the total to over 10,000 magnets needed for the project. Bob Baldi, manager of Accelerator Technology, said, "With over 12 years' experience in superconducting magnet technology, we believe that General Dynamics is in an excellent position to win a major share of the magnet production for SSC." All of the magnets for SSC represent over \$1.1 billion in business.

Because of the enormous size of the Super Collider program (\$4.4 billion), Congress must approve the start of construction. They are currently deciding just how much funding will be made available next year for SSC. The full

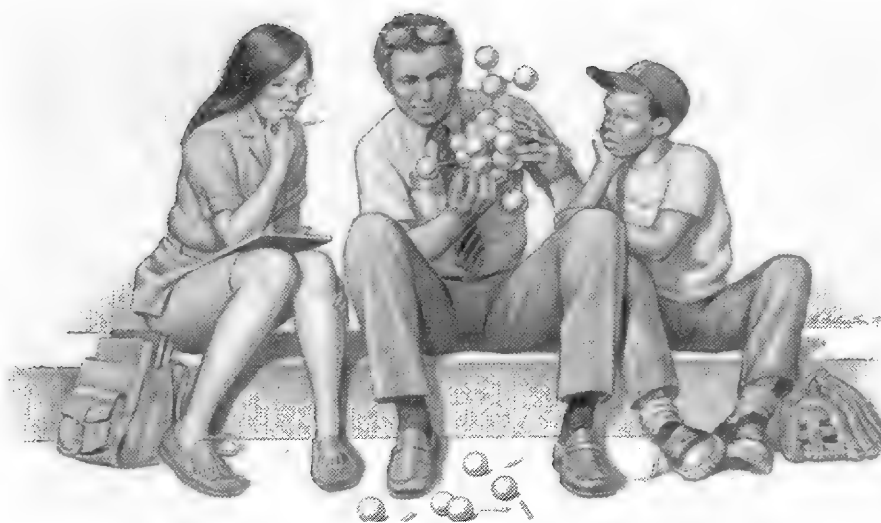


illustration by Ed Smith

House and Senate Appropriations Committees have marked up \$100 million for SSC in fiscal year '89.

Currently, the program is in a research and development phase with the U.S. Department of Energy. Laboratories are testing the current design of the dipole magnet. The next step is to invite magnet manufacturers to participate in the Technology Transfer program. Engineers from each company will spend several months on-site at the labs, learning particulars on the design and manufacture of the magnets to be used in SSC. The Department of Energy is also conducting oral reviews with the seven states selected as finalists for SSC location. Arizona, Colorado, Illinois, Michigan, North Carolina, Tennessee, and Texas comprise the best-qualified list. DoE will make the announcement of the final site as early as December.

SSC will provide many benefits to the United States. It will be the preeminent high-energy physics research facility in the world, thus providing American scientists a place to conduct research in the fascinating area of high-energy particle physics. A thriving industrial infrastructure will be created by the hundreds of companies required to design, construct, and operate the facility.

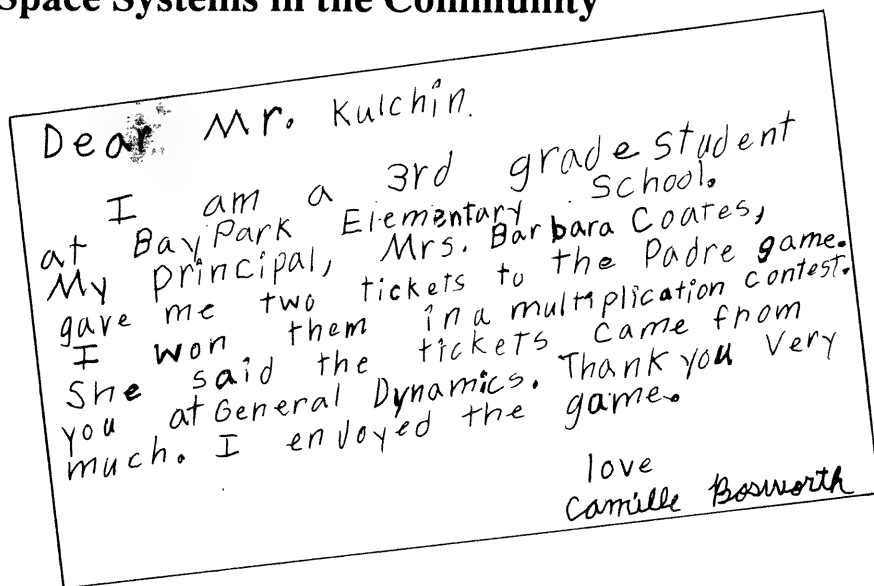
SSC research, like past accelerator research, will continue to produce spinoff technologies that will directly benefit our way of life. For example, Proton Beam Therapy, a new medical treatment for cancerous tumors of the eye, is expected to save extraction of 50,000 eyes each year. SSC will also benefit future generations. It will be a place where graduate students will study alongside today's leading researchers. And it will serve as a visible inspiration for all young people to pursue careers in science, engineering, and math.

Bob Johnson, manager of Energy Programs, sums up, "Since the discovery last year of the high-temperature superconductors, we have seen a tremendous increase in interest and funding for superconducting magnet programs. People are now realizing that the applications are numerous and the payoffs worth the investment."

The Energy Programs group is located in the Harbor Drive Facility across from Lindbergh Field Airport. For more information, call 29000.

6/17/88

Space Systems in the Community



Contributing to the welfare of the communities where employees live and work is very important to the Community Relations program at Space Systems. Through individual contributions and group efforts of employees, our company continues to build a positive rapport and strengthen the quality of life within communities across America.

Camille Bosworth experienced a little of Space Systems' community relations efforts when she won a multiplication contest at Bay Park Elementary School. She received two tickets to a Padres game. This was a special reward from Space Systems to commend and encourage her efforts in learning multiplication.

Why is that multiplication contest so important to us? What makes Camille so special? Camille and her third grade classmates are studying math now, in 1988. They may be studying advanced science, research, and new technology at colleges and universities by the end of this century. They are the graduating class of the year 2001. Their education is of great importance to us. Camille and her classmates represent the future.

Space Systems has allocated over 50% of the community relations budget to education. Over the years, we have sponsored several educational teleconferences and magnet school programs to help students prepare for careers in fields that require strong math, science, and engineering preparation.

Encouraging education through a community relations program — i.e., employees visiting grade school students,

career counseling for high school and college students, helping to combat adult illiteracy by teaching others to read and write, helping children with their homework, rewarding achievements in math — all this, is a very positive step for furthering education in America.

Community Relations involves many aspects of community work. If you would like to share in community involvement, or perhaps volunteer your time and talent for a special project, please complete the inserted Community Relations Survey. Return it to Mail Zone 22-7000. Questions can be referred to Dick Neal or Tamara Brown at 77447.

Space Briefs

Fifty-two people enjoyed a breakfast sponsored by the **Employee Suggestion** program to thank them for serving on the Suggestion Review Board and as evaluators for employee suggestions throughout the year. . . . The **Adaptable Space Propulsion System (ASPS)** program has gone through a name change — to **Advanced Upper Stages**. The new name reflects the broader scope of activities, which now includes new upper stages for expendable launch vehicles as well as the space shuttle. . . . Dr. Lovelace held an all-hands meeting to discuss the **Quarterly Review** at

Statistical Process Control

Pilot Project Begins

by Gail Dimitroff, SPC Division Coordinator

The first Statistical Process Control (SPC) pilot project at Space Systems was initiated this month. The pilot project in the Finance department will review time distribution cards. Charlie Lloyd, division vice president & controller, began the training session with employees from Quality Assurance and Finance. SPC combines multidirectional communication with management involvement and a structured approach to problem solving.

SPC Process Action Teams involve those who best understand a process. Members learn simple techniques to better understand the process so that it can be examined and improved. Theirs is a continuous activity which leads to superior management, control of the process, and improved quality. The Process Action Teams will determine whether or not the process is capable — that is, when it functions correctly, does it really do the job?

According to Ron Roberts, manager of Quality Engineering, "These projects are the first in a wave of activity with SPC. They'll lead to additional projects next year, which will include the welding process at Plant 19. SPC is expected to be a major enhancement in the improvement of quality, productivity, and cost reduction in processes at Space Systems."

Vandenberg last week. He will meet with employees at the **Eastern Space & Missile Center** on June 22. . . . **Master Scheduling**, headed by Smokey Stover, has been transferred to the Production department. . . . Rita Jackson from Cape Canaveral and Ruth Cameron from Vandenberg have agreed to serve as off-site *Orbiter* reporters, an effort to ensure good two-way communications from coast to coast. . . . **Happy Father's Day** to all the Dads out there. . . . Space Systems **employment** for the week ending June 10 was 3,538.

Graphic Copier Services Assessing Repro Costs

by Mary Piper-Jones

Cost-competitiveness is a term often used in the defense industry. One way for everyone to help keep us competitive is to be aware of costs incurred when reproducing work, both down the hall or at the Copier Centers.

We encourage employees to use Space Systems Copier Centers. Figures show that in the first month of operation, our division saved \$9,600 by having Copier Centers to meet division reproduction needs. The duplicating cost is .036 cents per copy.

When reproducing indirect work at our Copier Centers, please use the charge number 6648. It is important that employees using Convair's Graphic Reproduction use the charge number 38221 when reproducing indirect work. That charge number has been specifically assigned for ease of transferring charges back to Space Systems.

Health-Fitness Center Opens at Lindbergh Field

CRA opened the doors to yet another Health-Fitness Center last week at Lindbergh Field. Located on the second floor of Building 4, the new center has weight equipment, hoist circuit training equipment, and stationary bikes. Hours are between 6 a.m. and 6 p.m., with doors closed between 8 - 10 a.m. and 1:30 and 2:30 p.m. Membership is \$50 a year for General Dynamics employees. For more details about the Health-Fitness Center, call Karleen at 24736.

NMA Scholarship Night

National Management Association will hold their annual Scholarship dinner meeting on Wednesday, June 22, at the Hyatt Islandia. Ten \$1,000 scholarships will be presented. Joe Alcala is the executive host. Everyone is invited to attend. NMA Boosters are selling tickets.

photo by Tim Whitehouse



The purpose of *Space Systems Division Orbiteer* is to report the way employees — like Bill Cole, program estimator — work together, to show the superior products they produce, and to share newsworthy information.

Bill has been in Contracts & Estimating since he joined the company two years ago. Bill's work involves him in nearly every aspect of cost proposals. His responsibilities include estimate development, management presentations and reviews, and customer fact-finding and negotiations, all of which have provided him many opportunities to excel in his career. The aspect of his job that Bill enjoys most is proposal negotiations.

Bill says he "felt right at home" when he joined the division because of friends and colleagues here who were also graduates of Northern Arizona University. He will soon transfer his skills to Commercial Launch Services, a subsidiary of General Dynamics.

Taking advantage of San Diego's great weather, Bill enjoys fishing, hunting, scuba diving, and bicycling. A gift from Patty, his wife of six months, has spurred an interest in rock climbing, which he now pursues in various areas throughout San Diego County.

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Rita Jackson, ESMC Reporter 853-7255
Ruth Cameron, WTR Reporter 866-1709
Linda Loffredo, Editor

photo by Med Beauregard



Communication Center employees are Cyndee Balistreri, Doug Zink, and (seated) Dave Vegh.

Space Systems now has two FAX/TWX Message Centers. They process incoming and outgoing messages on the TWX, telex, and facsimile machines. It includes mailgrams, telegrams, and cablegrams, both domestic and international.

"With the advent of overnight mail and the cost and time of long distance phone calls, the facsimile has become a very affordable communication alternative," said Doug Zink, Voice Data Services supervisor in Information Resource Management.

FAX machines scan a document and convert dark marks into digital pulses that are changed into audible tones. They are transmitted over standard phone lines to a receiving machine that reconverts the tones into digital pulses and prints a copy of the document, all in about 20 seconds.

Dave Vegh operates the Center located in Century Park building 2, second floor. Cyndee Balistreri operates the Center in Kearny Mesa's building 26, first floor. More information about the FAX/TWX Message Center is available at 77838 or 39296.

ORBITER

GENERAL DYNAMICS SPACE SYSTEMS DIVISION

July 15, 1988



Division Vice President of Material Roy Bennett (left) presented Howard Patterson with a check for \$9,400 for his employee suggestion. Also congratulating him are Procurement Administrator Doug Willett and (on the far right) Procurement Manager Jim Muir.

photo by Dan Nash

Howard Patterson's Employee Suggestion Pays Off

Howard Patterson, a buyer in the Procurement department, submitted an idea to save money through the Employee Suggestion program last December. His idea saved the company \$94,082. The check Howard received in June reflected 10% of the savings due to the implementation of his suggestion.

For nearly four years, Howard has been assigned to purchasing stainless steel coil stock. That material is used for the skin and fuel tanks of Atlas rockets. The original manufacturing mill that furnished the coils had a problem with insufficient lighting in their factory. In order to have a good visual inspection, it was necessary for the mill to polish the coil to a high reflectivity to be able to identify surface problems before shipping the material.

Since a new vendor has been supplying the finished coil, Howard questioned the necessity of polished stock being procured and was curious enough to do research for alternative procurement requirements.

What he proposed was a way to eliminate the intermediate and final polishing steps of the material.

Continued on page 2

All Are Invited to the Building 5 Dedication Ceremony

All Space Systems employees are cordially invited to attend the Building 5 dedication ceremony in the Kearny Mesa Complex on Tuesday, July 26, at 10:30 a.m. The keynote speakers for the event will be the Secretary of the Air Force Edward C. Aldridge, Jr., General Dynamics President and Chief Operating Officer Herbert F. Rogers, and Corporate Vice President and Space Systems General Manager Alan M. Lovelace.

Employees should proceed to the ceremony site, which is on the south side of Building 5, by walking around the southwest corner of Building 5. Bus transportation from Sycamore Canyon and U.S. Air Force Plant 19 will be available. Space Systems employees will receive an Atlas II cap with our new logo for the occasion. Contact Fred Farmer at 39195 with any questions about the dedication ceremony.

The dedication ceremony is scheduled to last one hour. Space Systems employees should charge their labor as follows: Direct employees use account 6293, indirect employees use your normal indirect account. Check with your supervisor for specific labor charging guidelines in your area.

"One of the key business decisions that significantly contributed to winning MLV II," said Dr. Lovelace, "was embarking on the extensive refurbishment of the Building 5 production facility. The decision to proceed with this effort was reached only after thorough review and analysis. A recent tour of the facility by the U.S. Air Force Medium Launch Vehicle Program Office confirmed the extremely positive reaction of our customer to this completely renovated facility.

All of us at Space Systems Division can be proud of the contribution that our combined efforts will be making to American preeminence in space for the foreseeable future."

July 14 - 22

Visions of Space During National Space Week

Congress has set aside a week each year as National Space Week. It's a time for us to recall our accomplishments in space, from men orbiting the earth to walking on the moon, and to contemplate the knowledge we've gained from satellites that travel in our solar system.

It's a time to dream of what life in space might be like in the next century. And it's a time to explore the steps we must take as we turn those dreams into reality.

The Reuben H. Fleet Space Theater and Science Center is sponsoring symposiums, exhibits, and films during National Space Week. A series of free one-hour symposiums will be held in the Lecture Hall (see below). The exhibit "History of General Dynamics' Atlas Program" will be set up in the lobby. "The Dream Is Alive" will be playing all week. General Dynamics employees and their guests can receive a 20% discount to the Space Theater and Science Center.

Free Symposiums in the Lecture Hall

Space Art: The Making of a Cover

July 15, 4:30 p.m.

The Artist in Deep Space

July 15, 7:30 p.m.

The Earth Viewed from Space

July 16, 12:30 p.m.

The History and Design of Spacecraft Imaging System

July 16, 2:30 p.m.

Color in the Solar System

July 16, 4:30 p.m.

Scientific Data Visualization: Applications of an Emerging Field

July 17, 12:30 p.m.

Humans to Mars - Progress and Prospects *

July 17, 2:30 p.m.

The Challenge of Interstellar Flight **

July 17, 4:30 p.m.

The Post-Technological Era in Space

July 18, 6:30 p.m.

Biosphere II - How Getting Ready to Live in Space Can Help Us Here on Earth

July 19, 7:30 p.m.

Encounters of a Third Mode

July 20, 7:30 p.m.

Space and Lunar Facility Design (Enhanced by Artificial Biosphere and Earth-Based Analog Concepts)

July 21, 7:30 p.m.

Picture Space: An Astronaut's Perspective

July 22, 7:00 p.m.

The symposiums are being presented by many nationally-recognized experts, two speakers from Space Systems Division:

* Dr. Bruce Cordell, of Operations Analysis for Advanced Space Systems, will present **Humans to Mars - Progress and Prospects**. He looks at several Mars exploration strategies currently being evaluated by NASA involving early manned missions to the moons of Mars, combined Mars-Lunar programs, and international cooperation. He'll highlight several advanced technologies likely to be used in this imminent projection of human civilization into deep space.

** Gregory Ruffa, of Engineering Flight Mechanics, will present **The Challenge of Interstellar Flight**. People have long been giving thought to the matter of traveling to the stars. The magnitude of such an undertaking will be examined, along with the variety of proposals that have been made for building vessels capable of making these voyages. Our possible step toward becoming a starfaring civilization will be considered.

Call the Space Theater Education Dept. at 238-1233, extension 208 or 247, for more program and schedule information.

Employee Suggestion continued

Although the new material essentially contains the same chemical and physical properties, the surface condition of the new material is "commercial bright" instead of polished.

Since the polished finish in no way contributed to the form, fit, or function of the manufactured parts, changing the specifications resulted in an acceptable material at a greatly reduced cost to Space Systems.

Howard was extremely pleased with the success of his suggestion. "The ES program does work, and the spirit of interdepartmental cooperation was certainly evident," he said. "My special thanks to Norm Pintchuk, Ray Stevens, Jr., Sheryl Squire, Susanna Bruno, Rose Allen, and Dennis Bartlett. Their help was crucial to implementing my suggestion in a timely manner."

Do you have a good idea or a cost-savings method that can be applied to our business activities? In the first six months of this year, employees, including Howard, helped our division realize \$340,398 in cost savings. Suggestors have received \$37,344 for their implemented employee suggestions. Submit your good ideas to Susanna Bruno of the Employee Suggestion program at Mail Zone 22-7140 or call 77427.



photo by Jeff Smith

Though a bit later than most, the MLV II Win Party at Vandenberg Air Force Base was a happy occasion for Space Systems employees. On June 20, employees celebrated with pizza, drinks, and two large whipped cream cakes in the NCO Ballroom at Vandenberg. Enjoying pizza are, seated from left: John Fuhring, Ray Anderson, Bill Whitted, Nick and Millie Brockett.

Announcing the Employee Assistance Program

Space Systems now has an Employee Assistance program (EAP) for salaried employees. The EAP will provide confidential, professional consultation to assist salaried employees and their family members with personal problems such as marital conflict, career issues, concerns with adolescents or school age children, alcohol or drug dependency, financial concerns, eating disorders, or simply the desire to discuss a personal decision. There is no charge for any services rendered under this program.

National Resource Consultants are developing and maintaining the program. They are a San Diego-based firm managing EAPs for companies throughout the country. They have a reputation for quality programming.

Salaried employees and family members may call NRC toll free at 800/922-7222. They will schedule an appointment to discuss your situation. They will arrange for referral and help in your local community, or areas outside of San Diego.

A letter announcing the program will be mailed to the home address of all salaried employees.

Commercial Launch Services New Offices and New Numbers

Commercial Launch Services relocates on July 15 to new offices at 9444 Balboa Avenue. Information Resource Management has installed an AT&T System 75 XE telephone switch for them. This new switch necessitates new telephone numbers, including a new prefix (496-). Telephone features similar to others within the San Diego area will continue to be available.

The main telephone number for Commercial Launch Services is 64000. Contact directory assistance (0) for new telephone number information. Questions about the telephone services should be directed to Linda Sharp in Voice and Data Services at 66766.

Product Logos Debut

Making their debut next week at the Building 5 dedication ceremony are new logos being used for the Atlas family of vehicles. Variations of the logo design are shown below. The logos will be used on everything from banners to baseball caps. Items with the new design will soon be available for sale at the CRA general stores.

To recap the nomenclature: Atlas vehicles without Centaur upperstages will continue with the word "Atlas" followed by a letter based on configuration.



Atlas vehicles incorporating a Centaur upper stage will now be designated "Atlas" followed by a roman numeral to differentiate configuration. The commercial vehicles will be known as Atlas I. The currently planned commercial growth version will be known as Atlas IIA.

Space Briefs

To use a familiar phrase, it's OK to use either black or blue ink on timecards and to turn them in two hours before the end of the day on Friday. . . . **Jane Money** was honored as the Production Employee of the Second Quarter. . . . The U.S. Air Force would like us to use the abbreviations and titles GDSS/VAFB (Vandenberg Air Force Base) and GDSS/CCAFS (Cape Canaveral Air Force Station). . . . Congratulations to **Patti Pierson**, selected as the Employee of the Month for May for the Material department. . . . The latest C/SCSC Production ESAR visit by the Air Force resulted in the recommendation of our SIMS II-D/P for full Tri-Service validation, noting that it's very unusual to be recommended for both R&D and Production systems on the first try for

each. Way to go! . . . **George Philyaw** is the manager of Space Systems' Huntsville office. . . . **Dave Walker** and **Ken Dawson** have filed a patent application with the U.S. Patent Office entitled "High Energy Density Beryllium Inductor." . . . The folks who worked on the **Unified Payload Integration** received a Pacesetter group award, presented by **Bob Martin**. . . . Quality Assurance Employee of the Month for May was **Davie Hurlbert**. . . . Looking for **Engineering Supplies**? **Roni Kratz** and her group have moved to KM25, on the southeast corner of the first floor. . . . Typing and shorthand requirements for secretaries and management support have eased up; check the latest HRM. . . . Space Systems **employment** for the week ending July 1 was 3,636.

Bulletin Board

July 18. Tryouts for the GD Corporate Battle team. Call Paul Niemann at 78710 or Amy Garfield at 39921 to sign up.

July 27. 1988 Survey Focus Group meeting from 12:30 - 2:30 p.m. in the Titan/Centaur Mic Room, CP2. Issues raised at the first meeting (March 31) will be addressed. Focus Group members should RSVP to 77548.

July 28. Brownbag luncheon open to all secretaries and management support personnel. Titan/Centaur Conference Room from 11:45 a.m. to 12:30 p.m. The first in a series of monthly meetings to share ideas and information. RSVP to Lisa Lawrence at 77833.

August 8. Deadline for submitting invention disclosures for the Patent Review Board meeting scheduled for August 18. Contact Patent Counsel John Duncan at 73542 or Ted Parsons at 73402.

August 27. Santa Maria Barbecue. Mark your calendar now for the fun, food, and festivities of this annual company event.

Keeping Tabs on Copier Costs

by Mary Piper Jones

Pitney Bowes and Xerox copiers have been placed at various locations throughout the division. A meter-reading is taken to determine the monthly volume usage. That number is charged to user department(s) on a cost per copy basis.

The cost per copy when using a Pitney Bowes copier is .0132 cent, and the cost per copy when using a Xerox 1075 is .0148 cent. When over 50 copies are needed, please take the job to the Copier Center at either KM 26 or CP1.

Monthly volume readings also help determine the amount of paper and supplies needed at copier locations. Many people use paper allotted for copier use in laser printers.

As with the copier equipment, a monthly delivery of paper to the laser printers should be scheduled. It will prevent paper supply shortages at the copier machines and will also ensure billing accuracy to the user department(s).

Please contact Copier Services at 75808 or 75882 to let them know if there is a laser printer in your area (and which departments are using it) or if monthly billing information has changed due to department relocations.

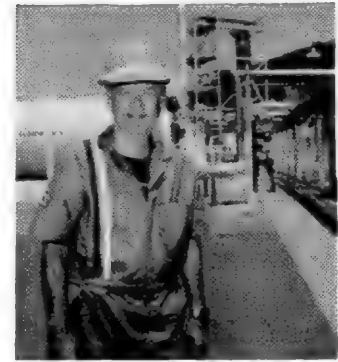


photo by Med Beauregard

The purpose of *Space Systems Division Orbiteer* is to report the way employees — like Don Butler, engineer test technician — work together, to show the superior products they produce, and to share newsworthy information.

"Whenever the company gives me the opportunity to go, I go," says Don. And go he has. With a total 21 years of service, he has traveled to San Diego from Cape Canaveral Air Force Station many times for extended assignments. Don will be working at the Sycamore Canyon facility for another couple of weeks.

Don says he experienced his proudest moment with the company while he was working on the Mercury project, which sent the first human into space. He recalls working in a hangar at the Cape when John Glenn was launched into history. "God only knows, but you hope he makes it. . .you're proud and hope all you've done was right."

At Cape Canaveral, Don is a member of the Propellant Loading System team. He is responsible for the liquid oxygen, liquid hydrogen, and rocket propellant storage tanks and the filling of them for the rockets. On launch days, he watches monitors and records from a blockhouse adjacent to the launch pad.

Seaport Village and games at the stadium provide entertainment for Don and his wife, Patricia Ann, when she's able to join him in San Diego.

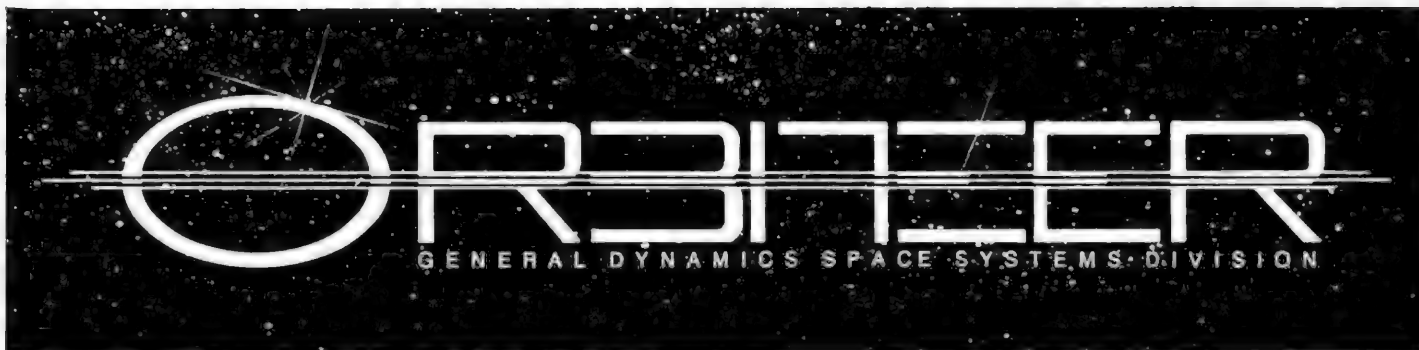
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Rita Jackson, CCAFS Reporter 853-7255
Ruth Cameron, VAFB Reporter 866-1709
Linda Loffredo, Editor



photo by Dan Nash

Banners drape entrance at Air Force Plant 19. Facility employees Garry Pistole (left) and Bert Hudson pinned up banners in Building 3 at Air Force Plant 19. Earlier in the year, Division Vice President & Program Director of the Titan/Centaur Program Russ Thomas, sponsored a slogan-naming contest. Well over 60 slogans were entered by employees. Dave Pearce of Planning was a winner with the slogan "Titan/Centaur, Lifting America's Future." The banner shown, "Plant 19 and Titan/Centaur, America's Team," was the other winning slogan, submitted by Dan Melton of Master Scheduling. Dave and Dan each received \$100 dinner certificates. The artwork and lettering were prepared by George Paul of Space Systems Graphic Services.



July 29, 1988

Building 5 Dedication Ceremony A Milestone for Space Systems

The newly refurbished Final Assembly area was officially christened for use in a gala event outside Kearny Mesa's building 5 on July 26. Two hundred guests and nearly 2,000 employees attended the ceremony as the Secretary of the Air Force, the General Dynamics President, and the Space Systems General Manager presided over the dedication and ribbon-cutting ceremony.

In talking about the decision that led to the refurbishments, Dr. Lovelace stated, "as the criticality of missions increased and the performance and sophistication of new satellites grew, a launch vehicle interface would be required to meet the most exacting standards. Satellites have long been assembled in clean rooms, but, until now, launch vehicles have not."

"By assembling our Centaur upper stages in this clean environment, we can offer a capability unmatched in our industry. This facility allows us to ensure that we build quality into our vehicles all the way through final assembly."

— Dr. Alan Lovelace

Herb Rogers, President and Chief Operating Officer of General Dynamics, said in his remarks that he was "especially proud of this facility because it underscores the growth of Space Systems. Though just established a few years ago, this young division is full of promise."

Secretary of the Air Force Edward Aldridge received a round of applause when he said, "we revitalized America's expendable launch vehicle industry, and

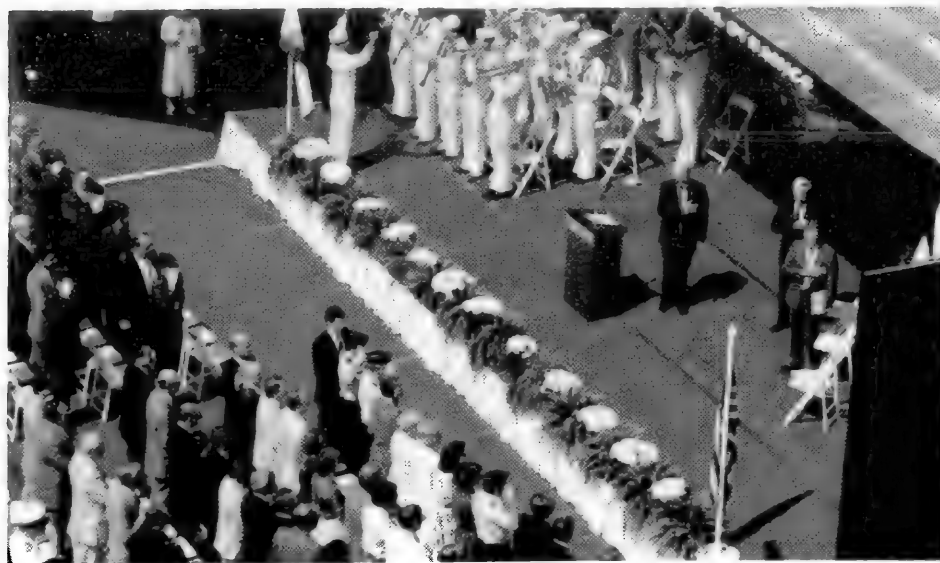
we intend to keep it that way!" He detailed the steps toward reaching and maintaining the goal of assured access to space. "Because of the actions we've taken, expendable launch vehicles have a good future," the Secretary stated. He said in conclusion, "All of us in the Air Force wish you well and hope that every launch will be successful."

The refurbished facility includes a clean room for final assembly, a general work area, a material storage area, and an office complex. The modernization

project in Building 5 upgraded all building systems, installed new equipment, refurbished tooling, and rearranged the factory to support new programs.

The clean room is 80,000 feet square.

Continued on page 2



Dedication Ceremony continued

It is rated as a class 100,000 (V.C. Level 2) clean room, which requires that there be no visible dust particles on any surface and that air be filtered.

Nine million cubic feet of air is filtered every hour in the clean room air system. The system is supplied by 600 tons of cooling capacity. At its peak demand, it requires 7.2 million BTUs of energy. Every entrance to the facility is controlled through vestibules. Contamination-control clothing will be worn by all personnel in the facility.

In this controlled environment, the temperature will be maintained between 65 and 78 degrees Fahrenheit, and relative humidity will range from 20 to 50%. The room will be used for final assembly of the high-energy upper stage Centaur.

The general work area is 120,000 feet square. The production mockup, manufacturing technology, and support functions will be housed here. The area has a ten-ton overhead bridge crane to support material handling requirements.

The material storage area occupies 30,000 square feet. Raw material, purchased parts, work in process, and government-furnished material will be stored in this area. To ensure proper segregation and accountability, automated vertical carousels will be used for high-density storage of small parts.

The office area in the southwest corner of building 5 has over 15,000

square feet. One hundred people from production, engineering, material support, quality assurance, and DCAS Quality Assurance will work in this area. Windows to view production operations are located in the east and north walls of the office area.

Refurbishment began in December of 1987 and was completed in July 1988. Burns & Roe was the architect and engineer of the project, and Hensel Phelps was the general contractor.

A new clean room also opened at Vandenberg Air Force Base this week, along with a new harness fabrication area. The new areas are located adjacent to each other in VAFB building 7525. Training technicians and inspectors in the latest techniques they'll be using has already begun.

The opening of clean rooms at both San Diego and Vandenberg found technical training for technicians and inspectors already underway.

Jim Nunnally and Bill Secrist are technical trainers based in San Diego. Jim, in cooperation with Dale Davidson, group engineer in the avionics labs, has been teaching technical classes at Vandenberg.

Technical training enables employees to understand the purpose, skills, and responsibilities associated with their job and meets certification needed to fulfill contractual requirements.



photo by Jeff Smith

Technical training classes began at Vandenberg Air Force Base in June for technicians and inspectors. A new clean room and harness fabrication area opened at Vandenberg on July 25. Listening intently to Instructor Jim Nunnally are (from left) Jim Kirby, Randy Ancheta, and Nick Brockett.

Employee Assistance Program

San Diego (619) 291-0330
Toll Free 1-800-999-7222

Invest in America — Buy Savings Bonds

The annual U.S. Savings Bonds campaign will be held during the first two weeks of August.

This year's theme centers around the Olympics. As most of you know, the U.S. volleyball teams live and train right here in San Diego. General Dynamics will support these outstanding Olympians with a donation in conjunction with our annual savings bonds campaign.

As another incentive for participation, three prizes will be raffled off daily during the campaign. All savings bonds participants will be automatically entered in the daily drawings. Prizes include a variety of packages, from dinners to concerts and sports tickets. A special grand prize will be presented in a final drawing on the last day of the campaign.

Jeff Irons, director of Marketing, is coordinating this year's campaign. Each major department has appointed a savings bonds coordinator who will be soliciting your participation during the next two weeks. You'll have the opportunity to enroll, or increase your deduction, in the savings bonds program.

Support a strong America. Make a secure financial investment in your future and the future of your children through U.S. Savings Bonds.



Voting is one of the most cherished freedoms of American citizenship. Do you plan to vote in this fall's general election? What issues are most important to you? We're preparing an article for our General Dynamics Register to Vote campaign. Send a short summary of those issues, your name and phone number to the *Orbiter*.

New Trends in Transfer Policies

To further enhance the career development and opportunities available within our own division, salaried employees may now be in a job classification for six months prior to applying for another position (instead of waiting a full year) within Space Systems.

Although permission from supervisors is no longer needed, acknowledgement of an employee's intent to apply for posted job openings is required. Supervisors initials on the S.P.A.C.E. application form, which is submitted to Professional Staffing, is sufficient. An AVO is still required for employees with less than six months in a job classification.

Employees may be interviewed during normal business hours or at a time convenient to both parties. Following a mutually beneficial decision to accept a job, a transfer would be arranged within a maximum time of 30 calendar days. Human Resources Manual 3-58 will be published to reflect these changes.

PC Access to Company Policy Abstracts

by Tom Ford
Information Resource Management

As part of an ongoing effort to make company policies more useful to a greater majority of employees, a Standard Practice Abstract On-Line Index has been developed. It will be accessible on personal computers (PCs) in key locations throughout the division.

The PC-based system can serve as an information center for all policy-related references. According to Frank Maxfield, manager of Information Resource Management, "The few minutes it takes someone to learn this system will be more than offset by the time saved by using it, thereby bringing company policies into a more active role throughout the division." In addition to the obvious savings in search time, the system has a quick retrieval speed and is user-friendly.

A prototype version of the system is now located on the second floor of Kearny Mesa building 3. IRM plans to explore further automation of company directives based on this system usage.



Back row, from left: Dick Hora, Doug Willett, Ed Squires, and Dave Parsons. Front row: Larry Gilmore, Greg Pate, Dr. Alan Lovelace, Patsy Burroughs, Gary Cono, Susanna Bruno, and Dennis Bartlett.

Med Bearegard

Patsy Burroughs Is 1987 Suggester of the Year, Greg Pate the Runner-Up

The Employee Suggestion Review Board voted Patsy Burroughs the 1987 Suggester of the Year. Runner-up Greg Pate received a Certificate of Achievement award.

Patsy proposed modifying the shipping rack of the 10- or 14-foot forward and aft bulkhead rings of Atlas and Centaur to accommodate three rings per shipment. In the past, these rings were delivered from the supplier in Los Angeles to San Diego one at a time. This new method enhances delivery schedules and saves transportation costs on a critical part. Patsy's suggestion is being applied to the Titan/Centaur and Atlas programs.

Patsy is a technical buyer in the

Procurement department. The total net savings from her suggestion for the first year alone came to \$85,000. Patsy has been, and continues to be, actively involved with both the Employee Suggestion and Cost Reduction programs.

Greg's award came from an excellent suggestion he made about the adapters for the Shuttle/Centaur program. Greg is a program control specialist in Master Scheduling.

The Employee Suggestion Review Board is made up of 11 members, with representatives from each major area. For more information about how you can get involved in the Employee Suggestion or Cost Reduction programs, contact Dennis Bartlett or Susanna Bruno at 77427.

Space Briefs

Spaceweek '88 didn't slip by unnoticed at Space Systems. Dr. Lovelace chaired a research panel on the commercialization of space at the Western Spaceport Museum and Science Center in Lompoc, California. Dennis Dunbar and Bill Phillipp served as panel members for Spaceweek symposiums. . . . Congratulations to Dr. Roberta Baade, honored as the Employee of the Second Quarter at the Human Resources all-hands luncheon. She was also presented with the NMA Manager of the Year award at their luau dinner meeting. . . . Although our nationally-ranked heptathlete Elaine Bergman didn't qualify for this year's

Olympics, she will continue her training in preparation for next year's competition. . . . Hang on to your coupons for Atlas II caps, as they will be redeemed for a cap by your supervisor. . . . Did you hear the speeches made at the Dedication Ceremony? If not, copies of the text are available through your supervisor. . . . Phil Harris has helped organize the "Spirit of San Diego" 10K run this weekend. Monies raised go to support the six disabled athletes from San Diego going to the Olympics this fall. . . . Pick up a copy of Atlas for Sale, an excellent article in the July/August issue of SPACE magazine, at the Convair Library in KM building 4. . . . Space Systems employment for the week ending July 22 was 3,734.

Bulletin Board

August 9-12. Employee Assistance Program training required for supervisors. To schedule class times, department training coordinators should call Terri Wheeler at 77548.

August 18. Smoking Cessation Program offered at CRA. Space Systems pays half the fee for employees and a portion of the fee for spouses who attend. Call Amy Garfield at 39921 to sign up.

August 18. Patent Review Board meeting for invention disclosures. Contact Patent Counsel John Duncan at 73542 or Ted Parsons at 73402 for more information.

August 15-19. Supervisors' required training for Sexual Harrassment Awareness. Training coordinators call Terri Wheeler at 77548 for schedules.

August 27. Santa Maria Barbecue, boasting the best beef in town on a day filled with food, fun, and festivities. CRA Missile Park will open at noon. Sponsored by the NMA of Vandenberg and San Diego. Get your tickets early!



April 1987 marked the beginning of a new Space Systems tradition as Training & Development sponsored a variety of workshops and seminars in conjunction with National Secretaries Week. The first Gregg Shorthand course was offered on site. The course ran a full semester, four hours per week after work. Seventeen secretaries and management support received a certificate of completion by demonstrating various levels of dictation.

Leona Plummer, a retired teacher from the San Diego Community College District, taught the course. Nancy Rodriguez, organizer and attendee said, "learning to take shorthand dictation takes a lot of time and effort. This intermediate-level course taught us the basics, while at the same time served as a refresher course to maintain the speed and efficiency required for this skill."

If you are interested in attending future courses in shorthand, business English, etc., contact Nancy Rodriguez at 38977.



Employees from Space Systems and General Dynamics Services Company gathered to hear high praise from Senator Lloyd Bentsen, Democratic vice presidential nominee. Last month, he paid a visit to our Harlingen production line in his home state of Texas. Reg Hayworth, Director of Operations at Harlingen, escorted the Senator on a tour of the Titan/Centaur and Atlas production lines, vertical assembly building, coatings facility, material warehouse, and the machine shop. He commended General Dynamics efforts to advance space technology for America, while at the same time supporting the local industry of the Rio Grande Valley in Texas.



photo by Med Beauregard

The purpose of *Space Systems Division Orbiteer* is to report the way employees — like Margo Fernandez, financial analyst senior — work together, to show the superior products they produce, and to share newsworthy information.

Margo has just moved to a new position in the Titan/Centaur program office. "I'm enjoying the exposure to a new area of finance." Margo is involved in providing overall cost and schedule progress to the customer, Martin Marietta. She helps to ensure that the program is adequately budgeted for authorized tasks and provides sales, profit, and cash projection information for the program on a quarterly basis.

She joined the company in 1983 after receiving a Business Administration degree from the University of San Diego.

On a personal note, Margo has just made another big decision in her life. What began three years ago as a working relationship with Randy Sanner culminated in a proposal for marriage. They plan to marry in April 1989. Congratulations!

Margo is also concerned with the plight of the homeless in San Diego. Once a week, she is part of a group of GD employees who work with the Salvation Army to provide food and clothing for the homeless. Being involved in the Homeless Outreach Program has given Margo a new appreciation for life. "It helps me realize how lucky I am. . . and how very much I have."

— Bill Walker, SDSU Intern

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Rita Jackson, CCAFS Reporter 853-7255
Ruth Cameron, VAFB Reporter 866-1709
Camille Kahlert, HuntsvilleRep.880-0660
Linda Loffredo, Editor

ORBITER

GENERAL DYNAMICS SPACE SYSTEMS DIVISION

September 9, 1988

Pioneer 10 Continues Solar System Exploration

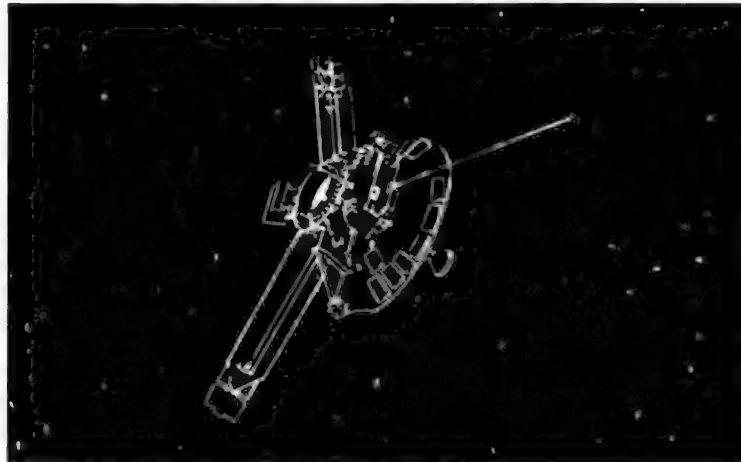
Pioneer 10, the first spacecraft to leave the solar system, is the most distant man-made object in existence. It was launched on March 2, 1972 by Atlas/Centaur 27. The mission was originally scheduled to last 21 months; Pioneer 10 has now spent 16 years in space, and five years beyond the orbit of Pluto, some 4 billion, 175 million miles from the Sun. Radio signals, moving with the speed of light at 186,000 miles per second, now take 12 hours and 26 minutes to travel from Earth to the spacecraft and back.

As it speeds on its journey, Pioneer 10 is giving scientists their first close-up look at the outer fringes of the solar system. Several scientists reported that the data from Pioneer 10 has forced them to rethink some of their ideas — the Sun's influence extends farther than some had thought, for example — but data from the spacecraft has also confirmed many widely believed theories.

During its travels, the Pioneer explorer is making discoveries about the Sun's influence in the local interstellar medium, called the heliosphere, and is seeking the boundary between this and the true interstellar gas. Pioneer 10 is continuing to search for gravity waves and a possible tenth planet in the solar system.

Einstein predicted that the universe is awash with gravity waves, but so far, no one has been able to prove it. Several gravity-wave detectors are operating and others are being built around the world in an effort to detect the waves, which should cause very slight movement when they pass through an object, just as a ripple in a pond causes a twig to move. However, the movement is so small that no one has succeeded yet in detecting a single wave.

Pioneer 10 will measure infinitesimally small changes in its distance from the Earth, changes that



Pioneer 10, launched by Atlas/Centaur 27 in 1972, is shown in this drawing as it sails through space more than 4 billion miles from Earth.

could only be caused by gravity waves hitting the Earth and the tiny spacecraft, according to John Anderson of the Jet Propulsion Laboratory.

The changes should show up in the telecommunications link between Earth and Pioneer as a slight doppler shift — a change in wavelength caused by two objects moving either toward or away from each other.

For 10 days this December, NASA will use its tracking facilities in California, Spain, and Australia to monitor Pioneer 10 on a continuous basis in search of a tiny jiggle.

According to John Silverstein, Titan/Centaur Integration program manager, "At the time A/C 27 was launched, it was the fastest-moving vehicle known to man, traveling 35,000 miles per hour. We've learned a great deal since it left the solar system.

"The asteroid belt, a region of rocklike fragments and particles 50 million miles thick, wasn't nearly as dangerous as was originally thought. This celestial shooting gallery, made of boulders, rocks, and pebbles, is thought to consist of many shattered tiny worlds that never combined to form a planet."

John was a reliability engineer on the Atlas/Centaur 27 launch support team.

Russ Thomas, vice president of the Titan/Centaur program, recalls that the first three attempts to launch Atlas/Centaur 27 were scrubbed due to high winds. On the fourth attempt, a second-stage ready light failed to come on, but once the logic problem was resolved, Pioneer 10 was launched from Cape Canaveral launch pad 36A.

Pioneer 10 will travel farther and faster than any object ever made by man. Its nuclear-powered instrumentation continues to return a wealth of valuable information.

At some point, millions of years down the line, some other intelligent life may spot the spacecraft and snare it as it passes through. If so, there is a message on board telling any others out there that we are here. It carries a plaque of gold-anodized aluminum that bears the figures of man and woman, along with a message describing the Earth and our solar system, designed to show scientifically educated inhabitants of some other star system when Pioneer was launched, from where, and by what kind of beings.

Hello out there.



Volunteering their time to help the homeless in Balboa Park are (from left) Margo Fernandez, Peter Moison, Brian Brown, Julie Slater, Shirley Krystek, Nancy Anderson-Metz, and Mike McClellan.

Reaching Out to San Diego's Homeless

They care about the plight of the homeless people in San Diego's Balboa Park. They donate their time to a program that offers real solutions for the needy. They are employees of Space Systems division. They are Brian Brown, Connie Zinaga, Randy Sanner, Margo Fernandez, Julie Slater, and Nancy Anderson-Metz.

The Salvation Army's Homeless Outreach program is made up of volunteers that bring food, information, and encouragement right to the areas in San Diego where the homeless sleep.

Although they provide soup, medical supplies, and clothing to the homeless, they bring something much more significant — hope. They talk about and demonstrate the work ethic. They call it like they see it and are not afraid to tell someone to get a job or to try to resolve their own problems. They have inspired many men and women to take their lives back into their own hands and to be responsible for their future.

Because of their efforts these past months, the Salvation Army presented the Finance department of Space Systems with a plaque. The inscription, "For your compassion as volunteers," says a lot about what these employees are contributing to our community.

Exercise Your Right to Vote! by Bill Walker, SDSU Intern

Your vote is a direct voice in your country's affairs. Plan on exercising your constitutional right; plan on voting November 8th.

There are many rewards for voting. Let's consider a few:

- *Active instead of passive* participation. Did you know that by not voting you are still publicly voicing your opinion? You have chosen *not* to support any of the candidates. In fact, failure to vote can, and has, influenced many elections. Fourteen of our presidents have been elected with less than one percent majorities. That means a one-percent shift in another direction would have given us fourteen different presidents.
- *Satisfaction* that comes from participating in the democratic process. A recent survey indicated that an overwhelming majority of voting Americans (85%) feel extremely proud and satisfied when they go to the polls.
- *Tangible returns* in the way of improving one's way of life or ideas.

If these reasons aren't enough, consider the power of your vote. Rutherford B. Hayes became president in 1876 on the basis of a highly improbable sequence of one-vote decisions. An Indiana delegate, who was himself elected by one vote, provided the one vote in the Electoral College that elected Hayes. This vote was challenged, so a special commission was formed and Hayes was elected — again by just one vote.

The importance of one vote has often been demonstrated. For example:

- One vote in 1649 caused Charles I of England to be executed
- One vote in 1845 brought Texas into the Union
- One vote in 1923 gave Adolf Hitler leadership of the Nazi party
- One vote in 1941 saved Selective Service just weeks before Pearl Harbor was attacked.

PACs

The ultimate reward for participating in the democratic process is to secure more favorable policies supporting or advancing one's way of life or ideas. Political Action Committees (PACs)

offer that influence. By grouping individuals with a similar interest or supporting a particular candidate, PACs serve as your representative.

Previously, corporations were permitted to contribute as much money to a candidate as they desired. Things have changed, and now there are limitations. Corporations can now sponsor PACs that pool employee contributions for maximum congressional impact. PACs can donate up to \$15,000 per candidate during the course of all three elections — the primary, runoff, and general combined.

Space Systems offers a Voluntary Political Contribution Plan (VPCP) that dispenses funds according to GDSS legislative and political goals. There are certain qualifications for participating in this program. For more information, contact Charisse Matsumori at 39744 or Jeff Irons at 39810.

Absentee Voting

It is estimated that over 10 million Americans did not vote in the 1984 presidential election for one specific reason — they were traveling. Don't let traveling prevent you from voting. You can apply now for an absentee voter ballot for the upcoming election by writing to the Registrar of Voters, 5201-1 Ruffin Road, P.O. Box 85520, San Diego, CA 92138. Call for more information:

In San Diego: (619) 565-5800

From Cape Canaveral Air Force Base:
(407) 453-9540

From Vandenberg Air Force Station:
(805) 737-7705 or 346-7400

In Huntsville, Alabama: (205) 532-3510

The last day to register for the presidential general election is October 10. The last day to apply for absentee voter ballots is November 1.

Register and Vote

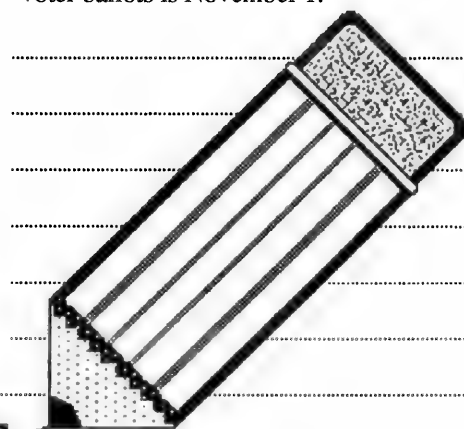




photo by Roger Jett

In keeping with the Olympic theme of the 1988 Savings Bonds campaign, Space Systems contributed \$1,000 to the U.S. Volleyball teams. Both the men's and women's Volleyball teams live and train in San Diego. They are preparing for the Olympic competition in Seoul, Korea this fall. Head coach of the Women's National Volleyball team, Taras Liskevych, accepted the check from Marketing Director Jeff Irons (right). Also present were volleyball team members Jayne McHugh and Karen Kemner (far left).

Seitz Leading the Way for QA Technologies

by Gail Dimitroff, Quality Assurance

Butch Seitz, an engineering specialist in Quality Engineering (QE), is coordinating several technologies that will have major benefits for Space Systems.

The first, theodolite, is already in use. It is an optical technique that can establish coordinates in space. It can measure any type of geometry as long as you can see it and is especially good for large structures. There are many benefits to using this approach.

Customer requirements are becoming more stringent and theodolite allows us to take measurements that we have never been able to take before. Theodolite is being used extensively in the Titan Centaur forward adapters.

QE is making plans for another advancement for early next year. Specifications are being written that will permit filmless x-ray equipment to be installed on five welding machines. This technique can present the image on a video monitor rather than on film. The x-ray image can be obtained right at the welding machine without removing the structure from the fixtures and taking it to the x-ray vault. This image is digital and a computer can be used for acceptance/rejection determination. With this new technique, there is no film to process, no set-up cost, and less reliance on x-ray interpretation.

Another advanced technique, electronic shearography, is being investigated to meet a single requirement. A new insulation system is planned for the Atlas Centaur. This system consists of foam panels glued to the exterior of the tank skin. In lab tests, electronic shearography is the only noncontact, nondestructive technique that has a demonstrated ability to identify disbonds between the adhesive and foam. A laser is employed to accomplish this task.

Electronic shearography is also a cost saver. It is faster, more capable, and more efficient than comparable mechanical methods. Equipment will be leased for use on a full-scale, fixed-foam test on Atlas/Centaur 64 tank to prove the method at Sycamore Canyon.

Space Briefs

Space Systems was awarded SLC-7, which is the first phase of the Titan IV/Centaur Launch Complex Design Study at Vandenberg Air Force Base. Space Systems also received the subcontract from Martin Marietta for the Survivable Satellite Solar Power Unit (SUPER) demonstration phase. . . . Congratulations to Lee Finkel who was selected as Contracts & Estimating's Employee of

Michael Felchlin Named EAP Administrator

Michael Felchlin will begin his new job as the administrator of the Employee Assistance Program (EAP) for Space Systems, Electronics, Financial Services



Center, Laser Systems Laboratory, and Commercial Launch Services on Monday, September 12.

Michael has both a masters degree in Rehabilitation Counseling and an undergraduate degree in Psychology from San Diego State University. He has extensive experience in the managing and counseling of employee assistance programs prior to joining Electronics.

As the EAP administrator, Michael will be responsible for program coordination among the divisions and subsidiaries; appropriate employee training; developing policies and procedures; and handling administrative issues associated with the Employee Assistance Program.

Michael's office is in Viewpoint Plaza, building 2, first floor. He can be reached at 68880.

National Resource Consultants provide the employee assistance service. Confidential and professional assistance with personal problems is available to employees and their families, with no charge for any services rendered. To schedule an appointment, call toll free 800-999-7222. In the San Diego area, call 291-0330.

the Second Quarter. . . . Menu plans are already under way for Cape Canaveral's annual picnic scheduled for October 1 at the Kennedy Recreation Park. Mark your calendar! . . . Congratulations to Material department's Employee of the Month for June, Shelly Sinclair, and to the July Employee of the Month, Ed Herring. . . . Space Systems employment total for the week ending August 26 was 3,830.

Dynaflex Newsletters Explain Options

The new General Dynamics flexible benefits program for salaried employees, Dynaflex, will be a substantial change from the current benefits policy. It offers many more options and provides for greater employee participation.

A series of weekly newsletters explaining Dynaflex are being mailed to eligible employees. The newsletters give details on the medical plans, reimbursement accounts, life insurance, and long-term disability available.

It's very important that these newsletters be kept for personal files, since it is the most comprehensive explanation employees will receive about the plan prior to enrollment.

Salaried employees must select a benefits package. By failing to do so, they will in fact, receive a default package with minimum coverages.

Dynaflex meetings for employees to discuss enrollment procedures are scheduled from September 26 through the end of October. At that time, each employee will receive a computerized packet listing their benefit allowances. Department coordinators are arranging meeting schedules.

Bulletin Board

September 9. The Holiday Inn at Montgomery Field is sponsoring Voter Registration Day. Stop by between 11:00 a.m. and 7:00 p.m. in the lobby to register to vote on November 8, Election Day.

September 12. CRA Fall Shape-Up, a ten-week adult fitness program geared towards beginners. Cost to members is \$10, cost to nonmembers is \$70.

September 28 – 29. Blood Screening for employees and their families. Cost is \$25 for a 26-point blood screening test. Available 6:15 a.m. to 9:00 a.m., at CRA Auditorium and Lindbergh Field B6.

September 29. Management support and secretarial brownbag meeting in the Titan/Centaur Mic Room, Century Park building 2. Topic for discussion will be EM/OS Use and Helpful Hints.

October 16. Swiftest Business 10K race and two-mile fun run at CRA Missile Park. Race entry forms are available at the CRA office and sporting goods stores.

October 17 – 21. Women's Opportunities Week.



The purpose of *Space Systems Division Orbiteer* is to report the way employees — like Bill Hayden, industrial electrician at Vandenberg AFB — work together, to show the superior products they produce, and to share newsworthy information.

While growing up in Garibaldi, Oregon, Bill considered working as a cartoon artist for Walt Disney Studios. He changed his mind and worked for ten years as a construction electrician prior to coming to GD 17 years ago.

Bill has found a way to incorporate his talent as an artist and his skill as an electrician. His free-lance cartoons have been featured in several newspapers and magazines on the central coast. Bill is now doing artwork for Awana Clubs International out of Chicago. Awana is a Christian youth, nondenominational organization. According to Bill, "Awana stresses family and Christian values."

Many of his cost-saving ideas have received awards through the Employee Suggestion program. According to supervisor Jack Hamner, Bill is a top performer and a key member of any launch team.

Bill and his wife, Sammie, celebrated their 25th anniversary this year. Jeff, their oldest son, majored in art at Biola University. Their other son, Randy, is a radio engineer for a Christian radio station that just began operation in Santa Maria.

— Ruth Cameron, Vandenberg Reporter



photo by Pete Autio

The Santa Maria Barbecue was a big success again this year. Nearly 1,200 Space Systems employees and their families lined up for the top sirloin beef prepared by Base Manager Chuck Harter and the barbecue team from Vandenberg Air Force Base on August 27. Games, sports, and entertainment had been arranged by Executive Host Bill Phillipp. The National Management Association sponsored the event at CRA Missile Park. Shown above, Dr. Alan and Mrs. Kathie Lovelace served the famous barbecued beef and baked beans at the 17th annual celebration.

Space Systems Division Orbiteer is published every other Friday. Items of interest to readers should be addressed to *Orbiteer*, Mail Zone V2-7145 (Post Office Box 85990, San Diego, CA 92138). Telephone (619) 576-5705.

Rita Jackson, CCAFS Reporter 853-7255
Ruth Cameron, VAFB Reporter 866-1709
Camille Kahlert, HuntsvilleRep.880-0660
Linda Loffredo, Editor

September 23, 1988

CLS Hosts Italian Space Group Visit

Memorandum of Understanding Signed as Result

Commercial Launch Services hosted a visit of the Aeritalia Space Group from Torino, Italy last month. As a result of that visit, a memorandum of understanding (MOU) was signed that could lead to a teaming arrangement in a number of international commercial satellite launching activities.

The MOU identified four separate areas of potential activity. The first is a feasibility study concerning mating the Atlas booster with Aeritalia's second-stage rocket, called Italian Research Interim Stage (IRIS). The IRIS, a solid-fueled rocket stage, might also be used as a third-stage atop Atlas/Centaur.

According to Dennis Dunbar, vice president and managing director of CLS, discussions with Aeritalia began about a year ago which led to the identification of studies to determine what would be of interest to both parties.

One of the studies would include evaluating the potential for placing secondary payloads in addition to primary payloads on the Atlas vehicles.

"Discussions included the possibility of Aeritalia manufacturing some parts for the Atlas," Dunbar said. "The development and production of space station resupply and logistics modules is another area to be studied, but is a much more complex issue."

The studies will be done by a joint team of key Space Systems and Commercial Launch Services



Ed Ward (far right) with members of Aeritalia Space Group on a tour of KM Building 5. From left are Dr. Franco Bevilacqua, Dr. Filippo Lanzarotto, Professor Ernesto Vallerani, and Dr. Paolo Piantella.

photo by Bill Stillman

personnel, led by Don Charhut, director of CLS Business Development.

Dr. Alan Lovelace, corporate vice president and general manager of Space Systems, said the MOU represents our company's "continuing interest in

establishing long-term agreements with experienced, technically qualified, and cost-competitive firms such as Aeritalia."

Ed Ward, responsible for CLS International Marketing, was the host for the Italian group visit.

Mission Integration Receives USAF Contract to Develop High-Energy-Density Battery

Space Systems' Mission Integration received a U.S. Air Force contract to develop a high-energy-density battery. The contract is valued at \$5.3 million.

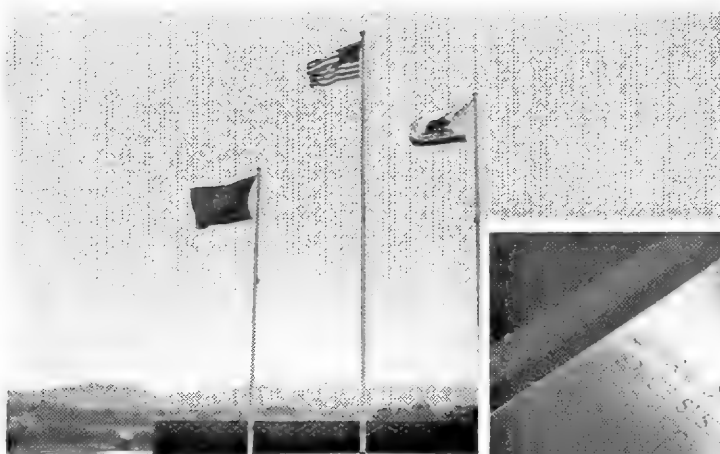
The contract calls for the Mission Integration group to develop and qualify (for space) a high-energy-density lithium/thionyl chloride primary battery to replace the current silver-zinc battery used on the upper-stage booster vehicles, such as the Centaur. The lithium battery weight is expected to be half the weight of the silver-zinc battery, projected at 68 pounds.

When fully developed and qualified, these lithium batteries will be used on

Titan/Centaur missions. The expected qualification date for the battery is mid-1990.

The program manager is Ken Lejman. Dr. Vic Kandarpa is the principal engineer on the project. Ted Shamshoian is the project advisor.

Mission Integration, headed up by Program Manager Bob Martin, has the responsibility of integrating the requirements of an Air Force program with the capabilities of a launch vehicle so that the spacecraft and the launch vehicle perform together to put the spacecraft in a proper orbit. Because of the nature of these programs, most of the detailed information concerning them is classified.



photos by Jeff Smith



A Proud Moment for Space Systems — Spaceport Monument Dedicated

Three flags were raised on a hill overlooking Lompoc, California this summer to mark the Western Spaceport Museum and Science Center's first permanent structure. The monument includes a brick wall bearing brass plaques engraved with the names of donors. Local companies, including Space Systems, who donated time and money toward the monument's completion, were recognized during the ceremony.

Special guests attending the dedication were Air Force Secretary Edward C. "Pete" Aldridge, California Representative Bob Lagomarsino, and California State Senator Gary K. Hart. Andrew Salazar, museum president and former mayor of Lompoc, made opening remarks to the crowd of 250 people. Dr. Alan Lovelace, Bill Phillipp, and Chuck Harter attended the dedication ceremony from Space Systems.

"This dedication... is the first major step in establishing this unique educational facility," Aldridge said in his address. Two F-4 fighter jets flew by just as the flags were being raised.

— Ruth Cameron, *Vandenberg Air Force Base Reporter*

Vultee Club Reunion Set

The 41st annual reunion of the Vultee Club will be held at the Los Amigos Country Club in Downey, California on September 30 starting at 6 p.m.

The club welcomes all former employees, families, and friends of Vultee Aircraft and Consolidated Vultee Aircraft, ancestor companies of the Convair Division. Former employees are welcome to join, at no cost.

The Club was founded in 1947 with the sale of the Vultee headquarters plant in Downey to North American Rockwell.

Guest speaker for this year's reunion is Ray Wagner, prominent aviation historian and archivist of the San Diego Aerospace Museum. Wagner is the author of *American Combat Planes*. He will talk about his work at the museum and about his current project, "Researching Fighter Design in California, 1936 – 1943."

Former employees and friends who want to attend the meeting should call or write Howard Vultee, 270 Bridge Road, Hillsborough, CA 94010, or Al Senechal, Vultee Club chairman, P.O. Box 5052, Whittier, CA 90607. The cost of the dinner is \$12 per person. For more information, contact Julie Andrews in the Public Affairs Office at 79004.

Office Supplies to be Obtained through a 'Stockless' System

Gone are the days of stockpiling supplies and the endless trips to the storeroom. Instead, office supplies will be ordered through a new system, referred to as "stockless," which will allow authorized personnel to receive supplies the following day.

General Dynamics has signed an agreement with Bayless Stationers for the distribution, procurement, and reporting of office supplies to begin next month.

Bayless Stationers will stock all the items listed on the standard order form and mini-catalog. Once the order forms are completed by authorized employees, they should be left at a local drop box for pickup from Bayless. Bayless inputs the orders into an on-site computer terminal access system. This system will maintain inventory and monitor the program to ensure supplies are up-to-date, what

inventory exists, etc. The prepackaged items will then be delivered to specified drop zones the following day.

Monthly computer-generated reports will be issued by the cost center to show usage trends. Bayless will submit a monthly summarized billing accompanied with original approved release forms. Accounts Payable will pay Bayless with a postaudit to follow.

The most obvious benefits of this new stockless system will be the prompt delivery and wider selection of supplies for employees. General Dynamics will save thousands of dollars under this new system by reducing company overhead.

According to Bill O'Rourke, chief in Material Operations, "our goal is to provide better service to office supply users, so that their time can be used more efficiently in the workplace."





photo by Roger Jett

Recent college hires and co-ops had the opportunity to gain an understanding of the "Big Picture" at Space Systems, that is, how we operate to meet our goals and how they fit in. Following the afternoon presentations by management on September 14, college hires visited with them at CRA Missile Park. From left are Susie Cowan – College Relations rep and coordinator of the event, Katie Johnson, Ken Dang, Steve Wiig, Todd Loutzenheiser, Cheryl Jakub, Gary Kruse – director of Systems Analysis, and Duc Dam.

Up the Ladder

Space Systems promotions will now be listed in the *Orbiter*. In the interest of space, only salaried grade 15 and above will be listed here.

John Earley was promoted to engineering chief. . . Tom Edmonds and Durwood English to program managers. . . Gene Perkins to project engineer senior. . . Robert Henry and Patrick Klement to engineering chiefs. . . Rebecca Vincent to engineering specialist. . . Bob White to program manager. . . Ted Moore and Jerry Stephens to engineering chiefs.

Quality Control Meeting Planned

The American Society for Quality Control has invited Dorsey J. (Jim) Talley, vice president of Quality Assurance at Fort Worth Division, to be the guest speaker for the October 11 National Quality Month meeting. The topic for the meeting is "The Quest for Sustaining Quality Improvement."

Jim is recognized for his outstanding leadership throughout industry and government in quality management. He is the author of the recently-published book, *Management Audits for Excellence*.

The dinner meeting is open to the public. For information and reservations, call Jerry Wilken at 29201.

Retirees

Thanks and good luck to these Space Systems employees who recently retired:

James Alexander, Mechanical Support Fabricator, Vandenberg Air Force Base Operations, 19 years

Larry Arnold, Launch Service Mechanic Senior, Cape Canaveral Air Force Station Operations, 31 years

John Bishop, Program Administrator Senior, Commercial Launch Services, 35 years

Mario D'Annunzio, Program Engineering Chief, Systems Analysis, 36 years

Edgar Hayes, Launch Service Mechanic Senior, Cape Canaveral Air Force Station Operations, 36 years

Bill Robinson, Financial Specialist Senior, Finance, 30 years

Space Briefs

Countdown has almost begun for the Atlas 63 E launch of the NOAA-H mission at **Vandenberg Air Force Station**. The schedule calls for blastoff at 3:00 a.m. Saturday morning, the 24th. Good luck to the Space Systems launch team. . . Reaching 100% participation during the 1988 Savings Bonds drive were the Quality Assurance, Marketing, and Human Resources departments. Most notable, however, was Engineering, with over 1,500 employees; they reached 99.1%. . . **Cape Canaveral** employees are pulling out the secret family recipes

Bailey, Burgeson Receive Patent for Idea

Richard Bailey and John Burgeson were issued patent number 4760365 as coinventors of the "Metallic Insulation for Superconducting Coils." Other inventors, Gustav Magnuson and Jerry Parmer, recently retired from Space Systems.

The primary purpose of the invention is to provide electrical insulation for coils which make it immune to deleterious effects of the intense radiation that is expected in future fusion reactors.

Superconducting coils are a special type of zero resistance magnetic coil. When used in fusion reactors, intense neutron radiation presents severe design difficulties in providing effective insulation. Oftentimes, the insulation will degrade in mechanical strength and electrical insulation properties. Therefore heavy shielding must be used to protect insulation materials from this radiation.

This invention meets the needs for an insulation with a life equal to that of the basic coil. Special metal alloys that feature an anodization coating to provide the insulation are key to this invention. A novel feature is that this coating can be selectively removed to provide shunt current paths which prevent coil damage during certain operational conditions. In addition, this invention has a higher allowable bearing stress than organic insulations.

Richard is an electrical engineer for Energy Programs at the Harbor Drive facility. John is a engineering specialist on the Liquid Rocket Booster program in Huntsville, Alabama.

in anticipation for the annual Family Picnic and Bakeoff on October 1. Sign up now; it sounds delicious and fun. . . **Bruce Cordell** of Operations Analysis, a noted advocate of human exploration of Mars, will be talking at the Reuben H. Fleet Space Theatre on "Strategies for Mars Exploration." All are welcome to attend the September 28 presentation at 7:30 p.m. . . IRM has moved again, but not far this time. They are now on the second floor of Viewpoint Plaza. . . **Space Systems** employment total for the week ending September 16 is 3,899.

It's a Private Party at Sea World for General Dynamics!

The National Management Association has made arrangements for an evening at the park exclusively for General Dynamics' families and friends. Employees from all the San Diego divisions are invited to attend the Sea World Family Night on Saturday, October 22 from 6 p.m. to midnight.

All the popular Sea World shows can be seen that night, including the Shamu Show, the Seal and Otter Show, Muscle Beach, City Streets, Sparklett's Water Fantasy, New Friends, and the Japanese Pearl Diving Shows.

There will be unlimited free rides on the Southwest Airline Skytower and Sea World Skyride. In addition, all the exhibits and Cap'n Kids World will be open for the special event.

NMA has arranged for a 30 percent discount off the regular admission fee for NMA members: the cost will be \$13.50. For nonmembers, the ticket cost is \$16. The deadline for ordering tickets is October 14. No tickets will be available at the gates, so be sure to send your order in early. To purchase tickets, contact Dave Van Auker at 77389.

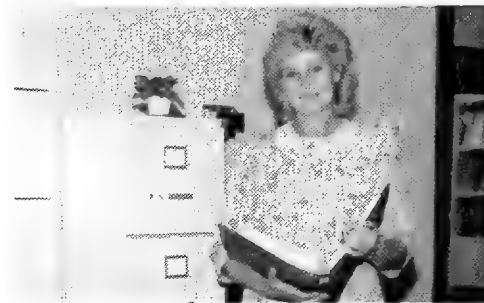


photo by Med Beauregard

The purpose of the Space Systems Division *Orbiter* is to report the way employees — like Diana Garrett, security administrator — work together, to show the superior products they produce, and to share newsworthy information.

Diana is one of six security administrators who are responsible for interpreting and implementing Department of Defense regulations as they relate to Industrial Security.

Diana views Security's role as one of service and support. "We are here to help. . . keep Space Systems in business by complying with the security agreement signed between Space Systems and the government." A crucial part of that role involves conducting thorough self-inspections, she said. "By having a good self-inspection security program, we will have favorable DIS inspections."

Having attended numerous DoD training courses, Diana has become very knowledgeable of industrial security during her eight years of practice in the field. Diana's goal, along with the rest of the Industrial Security staff, is to get all employees involved in security and help them become aware of their responsibilities.

Diana enjoys animals and playing the piano. She keeps busy with gardening and landscaping at her home in Oceanside.

— Bill Walker, *SDSU Intern*

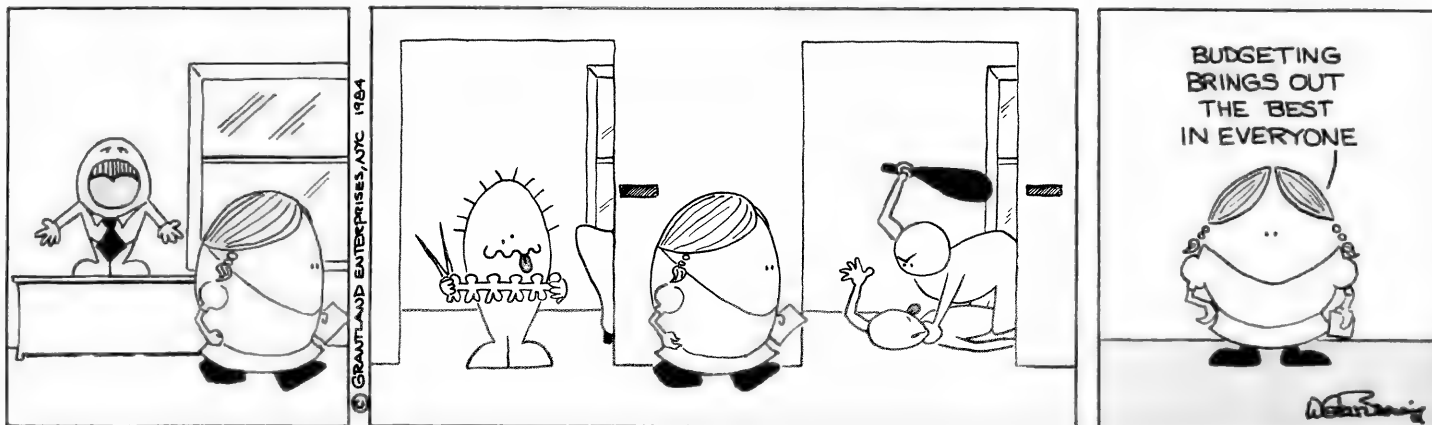
Notice Regarding Travel Orders: Travel orders with zero cash advances should be sent directly to Overhead Accounting rather than Financial Services Center. Mail to C2-7121. Refer to Controller's Notice No. 88-11 for specific details regarding this procedure.

Need to make holiday travel plans? Call CRA Travel. Dorothy, Harriet, and Laura take pride in finding the best dollar value for trips. They will take care of airline reservations, car and hotel accommodations, cruise and inclusive club (such as Club Med) bookings, and theater tickets in major cities. CRA Travel also offers a host of special discounts for cruises, international airline tickets, and rental car reservations. Stop by the CRA clubhouse or call the Travel office at 38248.

Space Systems Division *Orbiter* is published every other Friday. Items of interest to readers should be addressed to *Orbiter*, Mail Zone V2-7145 (Post Office Box 85990, San Diego, CA 92138). Telephone (619) 576-5705.

Rita Jackson, Cape Canaveral Air Force Station	853-7255
Ruth Cameron, Vandenberg Air Force Base	866-1709
Camille Kahlert, Huntsville, Alabama	880-0660
Linda Loffredo, Editor	

GRANTLAND®



ORBITER

GENERAL DYNAMICS SPACE SYSTEMS DIVISION

October 7, 1988

Women's Opportunities Week Begins October 14

In conjunction with the City of San Diego, Space Systems is offering informative presentations and programs in celebration of Women's Opportunities Week from October 14 through 22.

Flyers are being distributed this week to provide detailed information about each of the guest lecturers and events. We invite, and encourage you to take advantage of this special program.

Schedule of Events

- WOW Kickoff Social, 10/14
CRA Park Pavilion
4:30 p.m.
- Seminar: *Women as First-time Home Buyers*, 10/17
CP 1 MIC Conference Room
11:45 a.m. – 12:30 p.m.
- Natasha Josefowitz, "Paths to Power" *
10/17, Kearny Mesa Cafeteria
4:30 p.m. – 6 p.m.
- Brigadier General Jean E. Klick, 10/18
KM 2 Presentation Room
11:50 a.m. – 12:45 p.m.
(Reservations required. Call 65710)
- Networking Forum, 10/18
CP 1 MIC Conference Room
4:30 p.m. – 7:30 p.m.
- Workshop: *Managing Stress & Multiple Priorities*, 10/19
CP 1 MIC Conference Room
11 a.m. and 11:45 a.m. sessions
- "Dimensions of Success" Panel
Discussions led by Joan Sherley
10/19, KM 2 Presentation Room
11:45 a.m. – 12:30 p.m.
- Ann Morrison, "Breaking the Glass Ceiling", 10/20 *
Kearny Mesa Cafeteria
4:30 p.m. – 6:30 p.m.
- * Open to all employees, all divisions

Dynaflex Reminder

By now, all salaried employees should have received four Dynaflex newsletters. As you know, Dynaflex is a major change from the current benefits package. The enrollment period is just around the corner, so it's important to prepare for the benefit selection process.

Enrollment classes have started in most departments and will continue throughout October until all eligible employees have attended. The deadline for enrollment is November 5, at which time the default package will be issued.

A special phone line has been set up to handle individual questions and special situations. The Flex Infoline number for Space Systems employees is (619) 547-3000. Hours of operation are: Monday through Friday, 7:30 a.m. to 4:15 p.m.

First Steps with Child Care

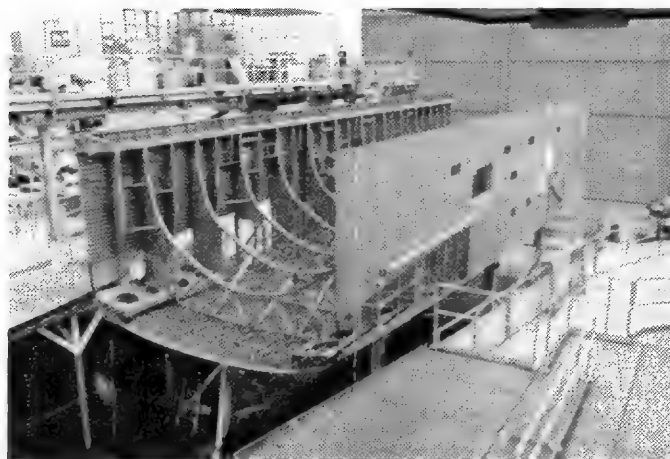
by Alda Jorgenson

As a direct result of the 1986 employee survey, assistance in the area of child care is becoming a reality.

Plans call for a division resource library that will provide information on child care in San Diego. A quick reference directory of child care providers and centers by geographical location will be available.

Other plans for the center include hosting speakers on the topic of child care at brownbag luncheons and posting information about local seminars.

Our resource center should become a reality by the end of the year. As progress continues, we'll keep you apprised via the *Orbiter*.



We can take pride in the successful voyage of the space shuttle Discovery, as General Dynamics built the midfuselage section of NASA's space shuttle. On March 15, 1982 General Dynamics delivered the structure to Rockwell International, the prime contractor. The midfuselage (shown above) was assembled in building 3 of Air Force Plant 19. It was one of six built in San Diego.

'Picture-Perfect' Launch at Vandenberg

At precisely 3:02 a.m., Saturday, September 24, Atlas 63E launched a NASA payload from Vandenberg's Space Launch Complex-3 West. This was the 18th consecutive successful Atlas launch from Vandenberg Air Force Base and the eighth of eleven TIROS-N spacecrafts identified to be launched on an Atlas E.

The spacecraft, a weather and rescue satellite, was manufactured by General Electric Astro Space Division under contract to the National Oceanic and Atmospheric Administration.

With a 24-foot fairing atop Atlas 63E, the rocket stood 94 feet tall with a diameter of ten feet, while the fairing's diameter was seven feet.

At liftoff, Atlas 63E carried 18,294 gallons of liquid oxygen and 11,384 gallons of RP-1 fuel, a highly refined kerosene.



The calm, steady voice of Gary Vick can be heard calling out the events of every Atlas launch from Vandenberg.

Atlas 63E was powered by one sustainer, two boosters, and two vernier engines using liquid oxygen and liquid hydrocarbon propellants.

Due to low clouds that had rolled in early that morning, the rocket launch was visible from the ground for only about fifteen seconds.

From the fallback area a mile away, the bright light and orange blaze of the rocket was visible long before the loud blast of the booster could be heard.

The 3,775-pound spacecraft entered its permanent orbit 25 minutes after blast-off, carrying with it a sophisticated, \$54.5 million weather and rescue satellite. From its 540-mile sun-synchronous, near-polar orbit, it will circle the Earth approximately every 102 minutes. As the Earth turns below, the satellite will observe a different portion of the Earth's surface on each orbit and the entire Earth's surface and cloud cover once every 12 hours.

According to NASA, NOAA-11 will be used along with a twin satellite, NOAA-10, to perform a number of functions, including:

- **Global weather forecasting.** NOAA-11 contains a radiation detection instrument that can measure surface temperature, an instrument that can measure different

temperatures at different altitudes, and a camera to take photos of the Earth — day or night — to examine cloud cover and land surface.

- **Search and rescue functions.**

NOAA-11 is designed to work with NOAA-10 and two Soviet satellites, along with French and Canadian electronic equipment, to home in on distress signals from downed aircraft or troubled ships at sea and notify tracking stations of the emergency's location.

As of August 31, 1988, the total number of lives saved had reached 1,149 —

506 marine,
596 air and
47 terrestrial
accident victims.

- **Ozone layer measurement.**

NOAA-11 contains an instrument designed to measure



concentrations of ozone in the Earth's atmosphere. The ozone layer, which scientists say is being destroyed by the industrial use of certain gases, protects the planet from the sun's deadly radioactive ultraviolet rays. A growing hole in the layer has been reported near the South Pole. NOAA-11 will be able to measure such a hole and track its growth.

The satellite will also assist in tracking hurricane activity and for agricultural, fishing, forestry, maritime, and other commercial uses.

NOAA-11 is the 14th in a series of weather satellites. It will relieve NOAA-9, which was launched in 1984, and which has already begun to malfunction.

Bill Phillipp, division vice president and program director of Medium Launch Systems, said that according to NASA, the satellite is in a perfect orbit and should become operational within a few weeks. "The precision of that orbit is due, in large part, to the skill and efficiency of our launch team and all the folks who support the program.

"We're very proud of the Atlas record we've established here. This marks the 18th consecutive success for the reliable



Reviewing final plans for the early morning launch are (seated from left) Val Brose, Norm Pagel, Ray Degn, Alex Mau, Don Bechtel, and Bruce Adams. Standing (from left) are Dave Stein and Dick Smith.

Atlas space booster, extending the longest running string of consecutive launch successes in the world today."

Covering more than 98,400 acres, Vandenberg Air Force Base is currently the third largest Air Force installation in the United States. Located 55 miles north of Santa Barbara, it sits on a massive angular peninsula jutting out into the Pacific Ocean, a safe place to launch intercontinental ballistic missiles and

space boosters.

Nearly 250 Space Systems employees work at the Vandenberg Air Force Base under the leadership of Base Manager Chuck Harter.

VAFB was chosen in 1956 as the Air Force's first

missile base. At the time, it was an abandoned Army artillery training ground called Camp Cooke. It was renamed in 1958 to honor General Hoyt

S. Vandenberg, the second Air Force Chief of Staff.

Since that time, more than 1,500 spacecraft have been launched from Vandenberg. A total of 271 Atlas missions have flown from there since the first one was launched in September 1959. Since 1982, Atlas has successfully launched four satellites in the Defense Meteorological Satellite Program, four NOAA weather satellites, four Navstar Global Positioning Systems satellites, one Geosat, and five classified payloads.

Atlas 63E was originally manufactured and delivered to the Air Force as an intercontinental ballistic missile in August 1961. After serving in operational status at Forbes Air Force Base and storage through 1982, it was modified, refurbished, and delivered to the Air Force Space Division in July 1987 as a space launch vehicle assigned to launch the NOAA-11 satellite. Eight remaining Atlas vehicles have been refurbished and stand ready for launch.

Dick Smith, chief of VAFB site support, waits for ignition at liftoff following commit start. Atlas 63E marked his 36th launch as test conductor.



Everything was well organized and planned. It was a perfect launch.

— Chuck Harter, VAFB Base Manager

Special thanks to VAFB Reporter Ruth Cameron for her contributions to this article.

Bulletin Board

October 16. The Swiftest Business in San Diego 10K race and two-mile Fun Run at CRA beginning at 8 a.m. A champagne brunch and health fair will follow the awards ceremony. Call Amy Garfield, CRA, at 39921 for details.

October 21. Head Coach of the U.S. Olympic Volleyball team Terry Liskevych will be the guest speaker at the NMA dinner meeting. Dinner served at 6 p.m. at the La Jolla Marriott.

October 22. Family night at Sea World for General Dynamics employees. Discount prices — check with NMA boosters.



Are You Registered to Vote?

Are you registered to vote in California? Do you understand all the issues placed on the ballot? Is there a chance that you will be traveling during elections? Begin now to find these answers.

Stop by or call the Registrar of Voters. In San Diego, call 694-3400. The main office is located just down the street from the Kearny Mesa facility, at 5201-I Ruffin Road.

You don't have to be out of town to vote by mail. Absentee ballots can be picked up at the Employee Benefits office.

Make your voice count. Vote on November 8.

Space Briefs

Motivational Programs is proud to report that, thanks to overwhelming employee participation, cost savings from employee suggestions have reached half a million dollars. . . . **Gary Kruse** hosted the third annual **Systems Analysis** picnic last weekend, another success. But the best part, Kruse said, was the tremendous response to the food drive for St. Vincent de Paul's Center for the Homeless. . . . Congratulations to Quality Assurance Employee of the Month for August, **Butch Seitz**. . . . "Comp tells all" in the upcoming training sessions when they explain just exactly how the salaried compensation process works. . . . **Time cards** are getting easier for salaried employees. You can now round off to the nearest half hour when posting all hours worked. . . . Looks like **Material** has taken over the CP 2 FAX center on the second floor, so to meet usage demands, a new FAX center has opened on the first floor. . . . Space Systems total employment for the week ending September 30 was 3,905.

photo by Med Beauguard



The purpose of Space Systems Division *Orbiter* is to report the way employees — like Yolanda Mendoza, marketing communications rep senior — work together, to show the superior products they produce, and to share information.

Yolanda came to General Dynamics in 1985 after 14 years of working on Capitol Hill in Washington, D.C. As a marketing communications rep, she works with program managers, vice presidents, and marketing managers to define concepts for various promotional items. She then conveys those ideas to Graphic Services, as well as outside vendors. She supports — and often coordinates — our division marketing efforts at schools, symposiums, and displays, both locally and around the country. Just recently, Yolanda helped at the Greater San Diego Science and Engineering Fair, serving both as an event planner and a judge.

Working with Space Systems' marketing group has given Yolanda an understanding and appreciation of the products that are built here. She has also had the opportunity to learn about and meet the people who use our products. In her office, autographed pictures of shuttle astronauts hang on the wall.

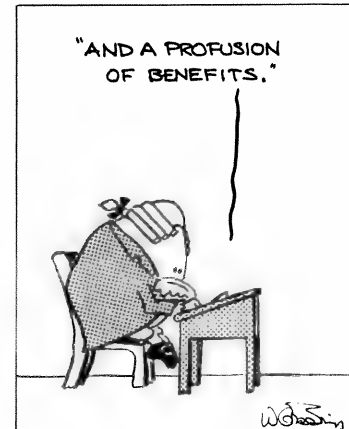
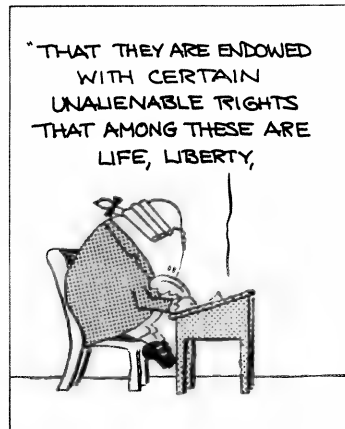
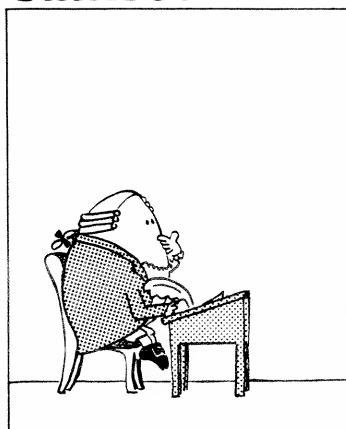
Yolanda had a quiet summer, as her nine year old son, Victor, was away at camp. She is back into the swing of things, though, as a Scout leader, soccer mom, and PTA member. Yolanda is also active in local and national politics, and, in her spare time plays the violin.

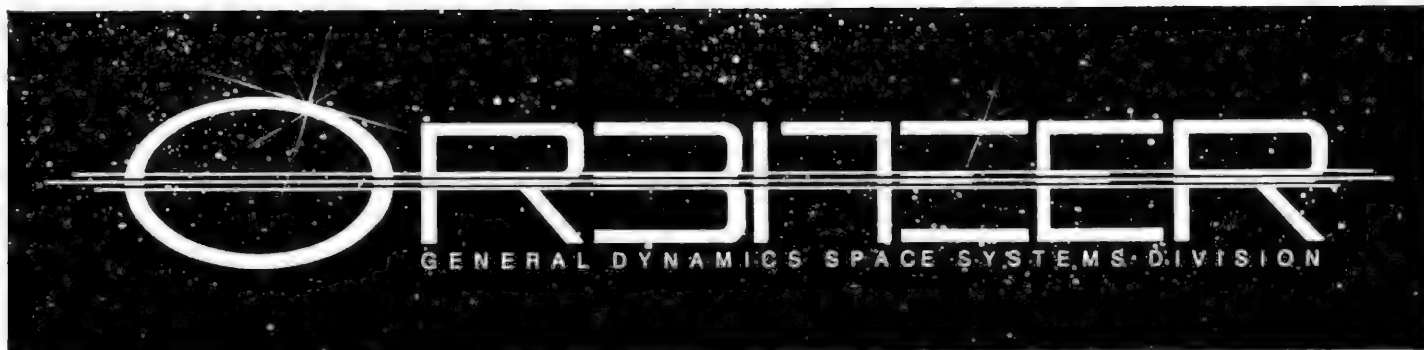
— Bill Walker, SDSU Intern

Space Systems Division *Orbiter* is published every other Friday. Items of interest to readers should be addressed to *Orbiter*, Mail Zone V2-7145 (P.O. Box 85990, San Diego, CA 92138), telephone (619) 576-5705.

Rita Jackson, Cape Canaveral Air Force Station	853-7255
Ruth Cameron, Vandenberg Air Force Base	866-1709
Camille Kahlert, Huntsville, Alabama	880-0660
Linda Loffredo, Editor	

GRANTLAND®





October 21, 1988

More Space for Space Systems — Construction of New Building Set for 1989

Plans have just been approved for the construction of a new building in San Diego for Space Systems. It will be built on the west side of the Kearny Mesa complex, parallel to building 26. The sketch on the right shows what is envisioned.

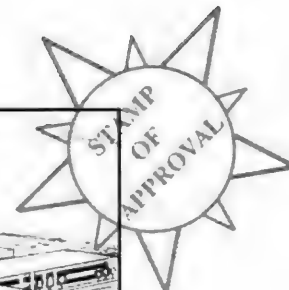
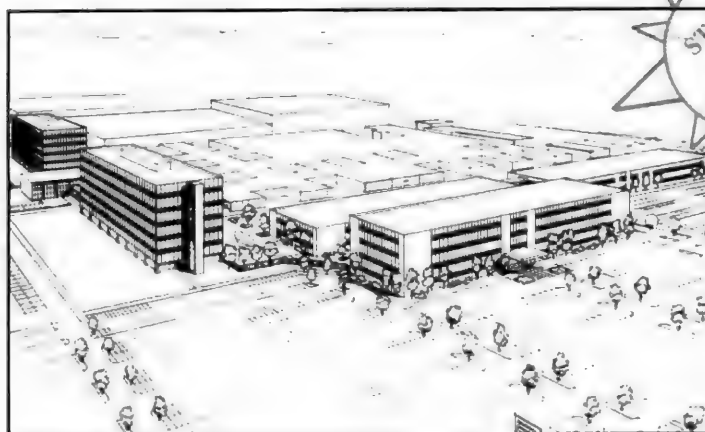
Architecturally, it will be consistent with, and have the same layout as buildings 25 and 26. The new building will be four stories tall, providing 200,000 square feet of office space.

Ground breaking is scheduled for May 1989. The new building should be ready for occupancy in the second quarter of 1990.

The top floor will host a new executive complex. The first floor will contain a lobby and conference center. Human Resources, Marketing, Proposal Development, Finance, Information Resource Management, and other functions may find a new home which will allow for functional colocation.

Eventually, we will terminate several leases at Viewpoint Plaza and Century Park. Ultimately, most of Space Systems offices will be located in the Kearny Mesa complex, except for the program offices of the Titan/Centaur, Medium Launch Vehicle, Advanced Launch System, and Commercial Launch Services.

On October 7, Herb Rogers notified the San Diego division general managers that he and Stan Pace had selected this option of the San Diego Integrated Facilities Plan for immediate implementation. This decision followed nearly two years of work by the San Diego divisions, facilitated by Richard Adams and Warren Eding of the corporate office.



Artist's drawing of new building planned for Kearny Mesa facility.

The plan was organized to address a number of facility problems at the San Diego divisions, which have been significantly impacted by the changing business conditions of the past few years.

According to Dick Hora, vice president of Planning and Administration, "This is another major milestone for our young division, and certainly an exciting one. I know we're all looking forward to the colocation of Space Systems."

Audit to Begin Atlas II Certification Process

An Air Force Audit Team will be at Space Systems between October 25 – 28 and November 1 – 4 to begin the certification process under the Atlas II contract.

The U.S. Air Force contract for MLV II, now known as the Atlas II, includes a unique requirement pertaining to certain quality assurance, manufacturing and engineering compliance documents. The contract permits us to tailor certain government specifications, which were subsequently approved by the Buying Activity.

It also provides for a management systems audit be scheduled no later than 180 days after the award of the contract to certify that the tailored specifications are satisfactory to meet the

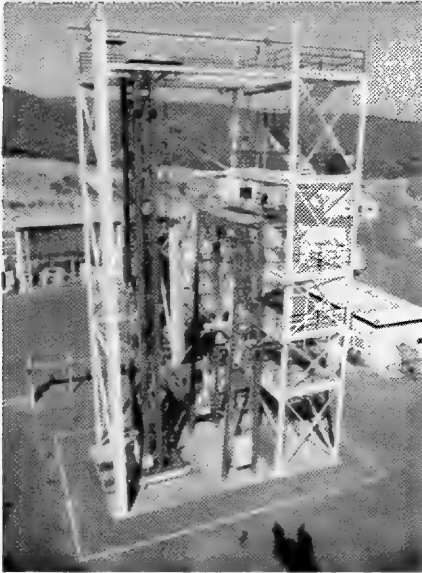
government goals.

You can expect to see the team anywhere within the San Diego facility, and possibly at Cape Canaveral Air Force Station and Vandenberg Air Force Base.

Please extend your full cooperation to the Audit Team members if contacted. Answer questions honestly and refer them to your supervisor if you don't know the answer. Make sure your work area is neat and organized.

The success of the audit is an important Atlas II milestone. If you have any questions about the audit or specifications that will be covered, call Mike Gusha, manager of Quality Assurance Administration at 75709.

Titan/Centaur Umbilical Retract Testing Off to a Good Start



Umbilical Retract System Test Tower at Sycamore Canyon.

by Jim Ball, Titan/Centaur Program Manager

The first test in a series of umbilical retract tests for the Titan/Centaur program was successfully performed at the Sycamore Canyon Site B facility on October 3. The test marked the beginning of a scheduled five-month test period that will verify the design and operation of the mechanisms required to eject the Centaur service umbilicals for flight.

Preliminary testing will be performed by ejecting only a portion of the umbilicals during each test at ambient conditions. As confidence is gained in the operation and test equipment, the tests will work up to duplicating the actual launch conditions as close as possible.

Liquid nitrogen (LN₂) will be used to chill down the LH₂, LO₂, and LHe umbilicals. Those lines pressurized for launch will be pressurized for testing. Those vented for launch will likewise be vented. Umbilical pull angles, loads and ejection sequencing will be demonstrated during the testing.

At the conclusion of the test program, every situation expected within the launch condition boundaries will have been simulated. Any design changes will be demonstrated in the test and incorporated into the Cape Canaveral Air Force Station systems.

Environment is Main Topic of Discussion

Space Systems hosted a "California Business Climate Assessment for Environmental Affairs" meeting on September 22. The purpose was to discuss with state legislators, senior management, other divisions, and other companies how to achieve a better balance between concerns for the environment and continued successful business operations in California.

General Dynamics established an Environmental Resources Management (ERM) program in 1984 and has been working ambitiously since then to protect the environment from hazards inherent in our business.

According to Michael Haro, the ERM manager for Space Systems, major corporate objectives were established at the end of 1984, calling for zero discharge of hazardous wastes, elimination of all polychlorinated biphenyl (PCB) electrical devices, and the elimination of all underground storage tanks. Collectively, the five California divisions have achieved a 76%

reduction in hazardous waste discharges, all PCB devices have been eliminated, and the last single-walled underground storage tank will be removed by the end of this year.

During the one-day meeting, two California state legislators spoke to the group: Assemblywoman Lucy Killea from the 78th district in San Diego, and Assemblyman Chuck Bader from the 65th district in Pomona.

Assemblywoman Killea talked about the 327 environmental bills that have been introduced during the California 1987 - 88 legislative session. "We have plenty of toxics laws on the books, we don't need any more laws; let's make the ones we have work," she said.

The prevailing theme throughout the meeting was the need for a proactive ERM plan for communicating and participating with the legislature, regulatory agencies, employees, and the general public. If you would like more information about the ERM program, call Michael Haro at 74771.

Photo Lab Remodeling

The Convair Still Photo Lab will be remodeled during the remainder of this year. As of November 1, their new offices will be located in Trailer 78F at Kearny Mesa. The phone number remains the same, 73205.

Photographers can be still be scheduled. In order to meet your needs, long-range planning will be necessary to avoid paying very high rush charges.

On the Lookout. . .

Several years ago, Vandenberg Air Force Base sent a Ditmco Model 8212 Circuit Analyzer to San Diego to support the Shuttle-Centaur program. The analyzer has been returned to Vandenberg without the manuals that were originally sent with the machine.

If you have any information on the whereabouts of any of the following, please contact Charlie McIntyre at 805/866-3360 or Jim Julig at 75091:

Manual 36-00164 through 36-00167
Volume I, II, III, and IV
Manual 36-00115
Volume V, Part I, IA, IB, II
Manual 36-00115
O.E.M. Manuals
Manual 36-00117
Volume VI
Manual 36-00291
Volume VII

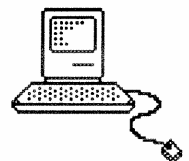
Attention Mac Users

*by Tom Georgi
Information Resource Management*

To prolong the lifespan of company MacIntoshs, protect hard disks, and save electricity, please shut down your PC at the end of the work day. This simple procedure is recommended by Apple:

- From the application you are working in, select "quit" to return to desktop
- On the special menu, select "shut down"
- Turn off the power switch on the back of the PC

Power switches on surge protectors should not be used to turn the computer on or off. This may cause power spikes which can damage hard disks.



Legislative Update

by Jerry Staub, Corporate Manager
Legislative Office, Washington D.C.

There are two issues of significant importance to General Dynamics Space Systems and Commercial Launch Services going on right now that I'd like to share with you.

First, legislation providing for a liability risk-sharing arrangement between government and industry in the event of a catastrophic ELV accident has passed both the House and Senate and is expected to be signed into law.

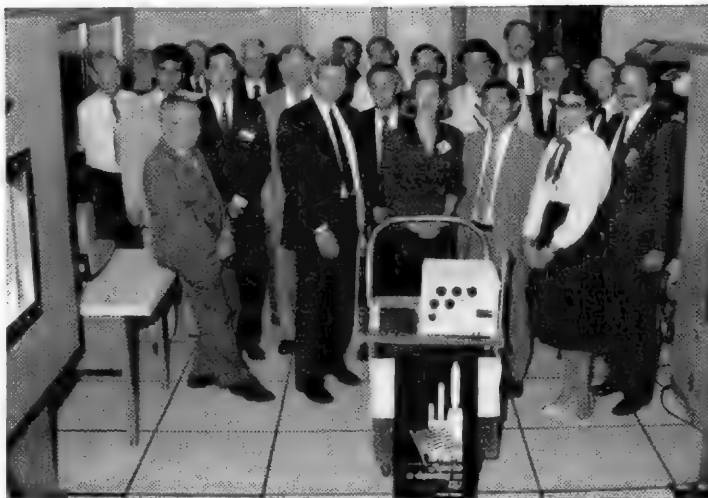
By reducing uncertainty in liability risk and sharing the burden between government and industry, this legislation will greatly assist the U.S. domestic ELV industry to be more competitive in the international marketplace.

The second major ELV issue receiving widespread attention is the entry of the Chinese Long March vehicle into the commercial marketplace. In September, the U.S. State Department announced that it was going to issue conditional licenses to permit the flight of three Hughes satellites aboard Long March vehicles. One of the conditions is that the U.S. and Chinese will establish fair market arrangements for future Long March launches. Without such arrangements, the Chinese government is able to undercut and disrupt the world market by offering their vehicle at rates that cannot be met by commercial Western companies.

General Dynamics has recently testified before Congressional committees on this issue, and has been working with Senators and Members of Congress, the United States Trade Representative, and other administration officials to help construct an equitable trade agreement. The USTR is in China this week to begin the initial round of negotiations. We will watch this matter closely, as the ultimate agreement will have a major impact on our ability to compete in the international commercial ELV marketplace.

**Join the Space Systems Voluntary
Political Action Committee**

**Call Jeff Irons or Charlsse
Matsumori at 39810 for more
information.**



*Members of the
Space Systems
team include
(alphabetically):
Sal Acampora,
Don Bitler,
George Guest,
Dick Martin,
Lou Orsich,
Dave Peters,
Dr. Bob Risley,
Darren Steiner,
Ron Turner,
Rich Velazquez,
and Dave Wolff.*

Ahead of Schedule, and Proud of It!

Space Systems accepted the first Digital Computer Unit (DCU) for use in the Titan/Centaur Avionics System, 5 1/2 months ahead of schedule. This critical avionics unit was manufactured and delivered by Teledyne Systems Company. The DCU is also the first production unit delivered by a major subcontractor on the Titan/Centaur program.

The DCU is the flight computer for the Centaur vehicle. It provides real-time processing for navigation, guidance, steering, and vehicle sequencing. The DCU also provides tank pressurization and vent management, propellant utilization, dynamic stability, pre-flight testing, and telemetry formatting functions.

Space Briefs

"This is the Place" debuted during the first annual **Women's Opportunities Week** at Space Systems. If you're interested in purchasing a copy of the film, call 65706. *Women and men* enjoyed the action-packed week of speakers, workshops, and seminars. . . . **Jackie Barrington** was honored as the Human Resources Employee of the Quarter at the quarterly HR luncheon. . . . The first building in San Diego to be designated as a completely **smoke-free** workplace is the Daley Center facility. ALS program folks moved in this week. . . . **Down at the Cape**, employees gathered to hear the second quarter review by **Dr. Lovelace**. Reports of the **Family Picnic and Bakeoff** indicate lots of fun times, with over 530 people enjoying the meal prepared by Launch Operations Supervisor **Jack Dean** and his crew of chefs. Also at the Cape, **Doug Lebo**, **Kelly Whitehead** and **Carl Gibson** of the Titan/Centaur program will be teaching 8th grade social studies in the Brevard County Junior Achievement Program, sponsored by

Space Systems and the NMA. . . . Congratulations to **Bob Whaling**, the Production Employee of the Quarter. . . . In the Material department, **Ken Tucker** was selected as the Employee of the Month for August, and **Shelly Sinclair** was named Employee of the Quarter. . . . Might you have an extra seat at the Thanksgiving table this year? Through the efforts of **Channing Burns**, children from the "Home of Guiding Hands" will have the chance to enjoy dinner with some of our Space Systems families. If you're interested, call him at 77973. . . . For those who have not yet received their **Dynaflex** packet, the default date does not apply. Everyone *will* have two weeks to review and complete the package. . . . Employee Benefits is looking for any employee who may have worked at the **Bethlehem Steel Corporation** at the time it was purchased by GD in 1964. They want to give the proper credit for service, so if this applies to you, call 39520. . . . Space Systems employment total for the week ending October 14 was 3,958.

Bulletin Board

October 26. Weight Watchers kickoff meeting at Lindbergh Field at 11 a.m., bldg. 14. Call Cindy Huddock at 26200.

October 27. Management support and secretarial brown bag luncheon. Topics: EM/OS archiving, LoA forms, and Professional Secretaries International. QA Conf. Rm, KM building 26, NE corner, 1st floor. 11:45 a.m. – 12:30 p.m.

October 27. Passion for Excellence seminar. A follow-up to the highly acclaimed book, *In Search of Excellence* by Tom Peters. Conducted by Russ Thomas and Dick Hora. KM building 26, RTDS Conference Room. 4:30 – 6:30 p.m. Call Caroline Harbeck at 39315.

November 10. NMA dinner meeting. Guest speaker is Lt. General Donald L. Cromer, Commander of the U. S. Air Force Space Division. Topic is "A View of the Soviet Space Program." Sheraton East Hotel, Harbor Drive. Dinner served at 6:15 p.m. Executive host is Jeff Irons.

November 12. Day trip to Ensenada, plus lobster dinner. \$39.50/person. Call CRA Travel to make reservations.

December 16. NMA Holiday Dinner and Dance at the downtown Marriott Hotel (formerly the InterContinental). Elegant dining and live entertainment. Executive host is Charlie Lloyd.

Flex Flash: CareAccount Change

There has been a significant change to the Dynaflex Program regarding the CareAccounts. The Welfare Reform Act of 1988 was just signed into law, which includes legislation affecting our program. Changes effective January 1 include:

- To be eligible under CareAccount, dependent children must be under the age of 13 rather than under age 15. Dependent children may be of any age if they are physically and/or mentally handicapped.
- The amount one can claim for the Federal Dependent Care Tax Credit is reduced dollar for dollar by the amount reimbursed through the CareAccount.
- The individual must provide the IRS with the name, address, and Social Security number of the dependent care provider. In the case of a child care or adult care center, the name, address, and Taxpayer Identification Number must be provided.

In the event that this affects your already-submitted Dynaflex package, you will need to follow the error resolution procedure. Check with your Dynaflex training coordinator or call the Dynaflex Info Line at 73000 for assistance.

Remember the Dynaflex enrollment deadline is November 5.

The purpose of the Space Systems *Orbiteer* is to report the way employees — like Dale Holsopple, precision welder at Air Force Plant 19 — work together, to

show the superior products they produce, and to share newsworthy information about events affecting Space Systems.

Not many people can say that there's a town named after their family, but such is the case for Dale Holsopple from Hollsopple, Pennsylvania. Charles Holsopple settled the town after coming to America from Germany. The town name has changed a bit thanks to the U.S. Postal Service, when they accidentally added an extra "l".

With over 20 years of welding experience, Dale prefers to let his actions speak for him, and they do. He began as a welder's helper in 1968, and attributes his knowledge to the fact that he learned from the best.

Today, he's doing state-of-the-art welding, utilizing a high-tech video camera precision welder to join the cap and the intermediate bulkhead of the Titan/Centaur.

As a board of directors member for the Contrib Club, Dale spends several hours a week in meetings. "Making the best decision as to how to use the Contrib monies," he said, "requires thorough review and a good understanding of each request that comes in to the committee."

Dale and his sons, Adam (age 4) and Justin (age 2), enjoy spending weekends in the desert. "Some of the most beautiful sunsets in the world can be seen from there," he proclaims.

— Bill Walker, SDSU Intern



The annual Air Force Association Convention was held at the Sheraton Washington Hotel in Washington, D.C. September 20 through 22.

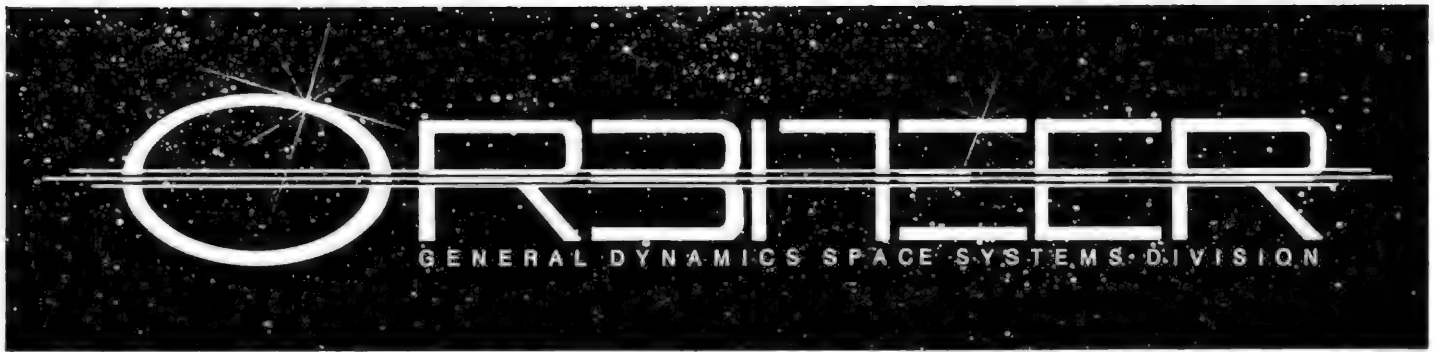
A highlight of the evening was the unveiling of the new Advanced Launch System model, showing the all-liquid concept developed over the course of the winning Phase II proposal effort. Pictured are (from left) John Gaines - marketing manager for Medium Launch Systems, Jeff Irons - director of Marketing, and Secretary of the Air Force Pete Aldridge and Mrs. Aldridge.

GD had a corporate exhibit which included representatives from Fort Worth, Electronics, Convair, Cessna, GD Services, as well as Space Systems.

Space Systems Division *Orbiteer* is published every other Friday. Items of interest to readers should be addressed to *Orbiteer*, Mail Zone V2-7145 (Post Office Box 85990, San Diego, CA 92138), telephone (619) 576-5705.

Rita Jackson, CCAFS 853-7255
Ruth Cameron, VAFB 866-1709
Camille Kahlert, Huntsville 880-0660

Linda Loffredo, Editor



November 4, 1988

Third Quarter Financial Report

by Charlie Lloyd
Division Vice President and Controller

Through the first three quarters of 1988, division sales are \$191 million which is \$24 million under the 1988 Operating Plan projections. This is primarily due to the delayed startup and funding constraints on the Space Station Power program and the Advanced Launch System contract.

Although the division sales are lower than planned, our backlog at year-end of \$1.1 billion shows strong long-term growth for our business.

Third Quarter Year-to-Date Status

Sales	\$191 M
Net Earnings (Loss)	(24) M
Pretax Funds Generated (Used)	(117) M
Indirect Costs	133 M

The division's pretax funds used for 1988 are estimated at \$188 million. This investment reflects the division's commitment to procure and manufacture 62 Atlas I/ II/ Ila vehicles.

Indirect costs for the division are forecasted at \$133 million for 1988 which is \$3 million under our revised Operating Plan goal. The division goal was updated to reflect the MLV II award and the division commitment to increase the Atlas manufacturing base from 18 to 62 vehicles.

The division's total employment is projected to be between 4100 and 4300 by the end of the year. Our 1989 employment level is estimated to be around 4800 employees.

Plant Services Bus Schedule

Since our facilities are spread out across the San Diego area, transportation to and from other locations is an important issue. The Transportation Department has revised its bus schedule to meet Space Systems needs and to encourage bus use.

If you have any doubts about riding the bus, you should first know that all buses are air-conditioned and that the high back seats make for a comfortable ride.

Questions about the bus service can be directed to the dispatcher at 75800.

KM = Kearny Mesa, Bldg 5, SW corner
and gate between Bldg 25 & 26
CP = Century Park in front of building 3
VP = Viewpoint Plaza in front of building 2
DB = Daley Building
BB = Balboa Building

Depart: KM 25 & 26 via 5, CP, DB, VP, BB
Times: 7:10, 8:00, 8:50, 9:50, 10:40, 11:30,
1:05, 2:05

Depart: KM 5 via CP, DB, VP, BB
Times: 7:15, 8:05, 8:55, 9:55, 10:45, 11:35,
1:10, 2:10

Depart: CP via DB, VP, BB
Times: 7:25, 8:15, 9:05, 10:05, 10:55, 11:45,
1:20, 2:20

Depart: DB via VP, BB
Times: 7:35, 8:25, 9:15, 10:15, 11:05, 11:55,
1:30, 2:30

Depart: VP via BB
Times: 7:45, 8:35, 9:25, 10:25, 11:15, 12:05,
1:40, 2:40

Depart: BB to KM 25 & 26
Times: 7:50, 8:40, 9:30, 10:30, 11:20, 12:10,
1:45, 2:45

Smokers Take a Day Off

Space Systems will be asking employees to quit effective November 17 — they aren't, however, going out of business. They just want employees who smoke to put their tobacco habit "out of business" for one day.

Space Systems, like hundreds of other companies around the country, is urging people to take part in the American Cancer Society's Great American Smokeout on Thursday, November 17.

The Smokeout, a 24-hour moratorium from smoking, is observed annually on the third Thursday of November. This year marks the twelfth anniversary of the "day off" from smoking.

Smokeout Central is the headquarters for information, events, and drawings in San Diego. Offices are located at the

Fashion Valley Mall.

Pledges to support a smokefree community are being made by both smokers and nonsmokers. If you'd like to sign up your support, pledge cards are available through Bill DeGarmo, manager of Safety & Health, on the second floor of KM building 26.

"Our employees are one of our primary concerns," said Bernie Kulchin, vice president of Human Resources, "so we appreciate this opportunity to encourage good health. The Smokeout is a light-hearted, good-natured campaign, not an 'us against them' type thing."

According to a Gallup survey, last year's Smokeout convinced 19.6 million American smokers to make an attempt at a "day off" from smoking.

MARS

may be in our lifetime

The greatest human adventure of our time — the manned exploration of Mars — will soon become the catalyst for a new course of human evolution in space. In addition to spectacular adventure, Mars offers mankind important new scientific knowledge, a compelling stimulus for technological growth, potentially great economic return, biological and cultural security, and a profound opportunity for the evolution of human civilization and consciousness into the cosmos.

by Dr. Bruce M. Cordell

Establishing civilization on Mars will require an advanced space infrastructure including an Advanced Launch System and advanced Shuttle, the Space Station, Space Transfer Vehicles, and Mars orbital and surface facilities. These and other infrastructure elements are either planned or under development by NASA. Indeed, *there are no major technological obstacles to our conquest of Mars.*

Although Mars programs will not be cheap, current estimates for the first manned Mars mission amount to an annual cost of less than \$10 per person in the United States for a 12-year program — equivalent to one less pizza per person each year! Indeed the price can be reduced even further by going *first* to the moons of Mars — Phobos and Deimos, internationalizing the mission to share costs, and/or utilizing resource synergisms between operations on Phobos, the Lunar surface and low earth orbit. Current work in the Mars/Lunar Advanced Research Study (MARS) programs at Space Systems has focused on the last area.

It's clear that large-scale human operations in deep space will require use of space resources for life support, propellants, and other purposes. One of our MARS studies has attempted to identify which site — Moon, Phobos/

Deimos, Mars surface, or Earth — would be the best fuel production location from which to support anticipated operations in deep space and low Earth orbit.

As reported recently at the International Astronautical Federation Congress in India, Phobos and Deimos compare favorably with even the Moon as the best future cosmic gas station for thirsty vehicles in Earth-Moon space. This is partly because the Moon is lacking in light elements and totally dry (lunar rocks returned by Apollo

astronauts contained absolutely no lunar water), while Phobos and Deimos have densities and characteristics similar to carbonaceous meteorites with up to 20% water. Thus, hydrogen fuel would have to be expensively imported from Earth to complement the oxygen which could be extracted from lunar surface rocks and used for propellants.

As an alternative, we have proposed that hydrogen and oxygen from Phobos be retrieved to the Moon or low Earth orbit to support lunar industrialization or operations near Earth. This is initially reasonable because every two years, Phobos and Deimos are more accessible from low earth orbit than the lunar surface! Preliminary cost analysis reveals that the Phobos scenario could

easily save the cost of the first couple of manned Phobos missions in only one decade of continuous operations (for reasonable post-2000 Earth launch costs).

What will greet us upon our arrival at Mars? Perhaps the most spectacular piece of extraterrestrial real estate in the solar system! And the best part of the bargain is that Mars is very Earth-like and practically crying out for humans to transform it into Earth II.

For example, although the Martian atmosphere is cold and thin, we can use simple techniques to extract water and breathable air from it. In addition to water, Mars has all the chemical

substances required for humans to establish permanent bases with relative ease; thus no costly imports are required.

Greenhouses would soon dot the red planet's surface as the burgeoning Martian civilization evolved. Studies of the Martian atmosphere would contribute to the riddles of the greenhouse effect and future ice ages on Earth. And,

gently lurking within Mars' red sands might be the remnants of an early alien fossil, preserved from a more clement time in Mars' history millions, maybe billions, of years before.

When will this magnificent Mars vision occur? NASA Headquarters is currently conducting a planning exercise which will culminate in a decision on which human space venture — lunar or Mars outpost — should initially be pursued.

This Pathfinder decision will occur between 1990 and 1992 and be followed by design and hardware programs in the mid-to-late 1990s. We should be well on our way to Mars by 2001.

Indeed, Mars may be in our lifetime.



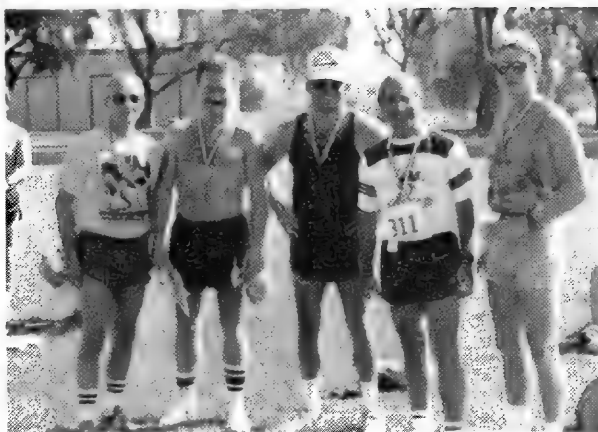
Painting by Michael Carroll

Running for the Swiftest Business



Pictured on left: Larry Stone, Mary Goetz, Les McCarter, and Charlie Lloyd.

Below: Dick Neal, John Roberts, Bob Walters, Bernie Kulchin, and Jeff Jean.



The sixth annual Swiftest Business in San Diego competition was the most successful ever. Seventy-seven teams competed in the 10K race. One hundred forty-four people joined in the two-mile fun-run/walk. The race began in the

Kearny Mesa parking lot and ended at the CRA park on Sunday morning, October 16.

A number of teams made up of some, or all, Space Systems employees participated. Teams included the *Odd Men Out*, *Facilities*, *Fleet Feet of Finance* (men's and mixed teams), *HR Rockets*, *Indirect Chargers*, *Lumbering Lunatics*, *Marketing Marauders*, *Oldies*, *C&E SOW Busters I and II* (men's teams), and *Deep Rubbing Heat*.

The Swiftest Business of San Diego was sponsored by the Convair Recreation Association. Pacific Bell claimed this year's Mayor's Cup trophy. The early morning event was following by a health fair and champagne brunch for all.

General Dynamics Day at the Museum of Man

Saturday, November 19 has been designated as General Dynamics Employees' Day at the San Diego Museum of Man in Balboa Park.

For the entire day (10:00 a.m. – 4:30 p.m.) employees and their families will be admitted free to the Museum with proof of employment (a pay stub).

On display will be the works of Everett Gee Jackson, entitled "Images of the Americas." It will feature sketches and paintings of scenes from his travels through Mexico and the Americas. Also on display are the Coors Gallery of Women Exhibit, which is midway in its three-year U.S. tour, and "Saddles and Samovars" an exhibit of Spanish and Russian cultures from Baja California.

Standard Practice On-Line Index

To make current company policies more accessible, a Standard Practice Abstract On-Line Index has been developed.

This PC-based system is available to all employees — no account number or password is needed. In just a few minutes, you can type in a keyword and the computer will list which Standard Practices (SPs) that deal with the subject being referenced.

Two new workstations for the Standard Practice Abstract On-Line Index have been added, one in Century Park Two and the other in Kearny Mesa building 26.

We encourage you to use the system when referring to current Standard Practices. Call Tom Ford, IRM, at 68758 if you have any questions.



Payroll Distribution Change

As of Monday, November 14, the Accounting department will be located at Viewpoint Plaza building two. The new payroll distribution schedule shows where those designated to pickup paychecks should go to pick up paychecks:

Kearny Mesa Cashier for:

Kearny Mesa
Sycamore Canyon

Viewpoint Plaza Two, third floor for:

Viewpoint Plaza
Balboa Building
Daley Center
Harbor Drive

Century Park Two, lobby,

Fridays only, 9 a.m. - 10 a.m.:

Century Park, 1st shift

Air Force Plant 19 for employees at:

Air Force Plant 19

All Century Park 2nd shift paychecks should be picked up on Thursday at the Kearny Mesa cashier. Direct questions about the new schedule to Kathleen Manrique at 77401. As of November 14, call Time Audit at 68616 with regard to specific questions about the payroll.

Space Briefs

It's that time of year again. All areas will be nominating people for the Employee of the Year award, which is presented by Dr. Lovelace at the State of the Division address in January. . . . Congratulations to

Jim Mikkelsen who was honored as the Material Employee of the Month for September. . . . **CRA Health Fitness Center** will be celebrating their 10th anniversary on Monday, November 7.

All are invited to stop by between 3:30 – 5:30 p.m. for refreshments, tours, free blood pressure and bodyfat tests. . . .

Kevin Jeras was selected as the September Employee of the Month for Quality Assurance. . . Every woman in the division should have received a **Women's Opportunities Week** poster by now — if not, call 65703. . . .

A **Materials Management Certification Program** will be offered here in January. For more info, call Karen Stiner at 75784. . . . Total employment for Space Systems as of October 20 was 3,985.

Comp Training "Tells All"

Photo by Med Beaugard



Compensation training for all salaried employees at Space Systems is well underway.

The training is in response to the Employee Survey, which

indicated that many employees were unsure as to how pay raises were determined and how the promotion process worked. The goal of the training sessions is to provide a clear explanation of the compensation process for a better understanding by all.

In the picture above, employees from Engineering Systems Development met with Dave Clemons, engineering director, and (standing on the left) Jill Moeller, compensation representative.

Bulletin Board

November 8. Presidential and general elections. Vote! If you do not have sufficient time outside of working hours to vote, arrangements can be made for time off. Refer to HRM 88-21.

November 15. American Society for Quality Control dinner meeting. Guest speaker is Dr. Lovelace on the topic "Quality, Our Assurance to Space." Stardust Hotel in Mission Valley at 6 p.m. Call Jerry Wilken at 29201 for more information.

November 22. Live and Breathe Smoking Cessation Program at CRA, in conjunction with the Great American Smokeout. Meetings every Tuesday and Thursday at 4:45 p.m. for one month, with three monthly follow-ups. Call 39921 to register.

December 16. NMA Holiday Dinner and Dance at the downtown Marriott Hotel (formerly the InterContinental). Elegant dining and live entertainment, playing a variety of contemporary, rock and roll, pop, and swing music. Tables will be reserved for singles, as well as couples. Discount room rates are available, call 77010. Executive host is Charlie Lloyd.

The purpose of the Space Systems Division *Orbiter* is to report the way employees — like Dick Bethel, engineering specifications representative — work together, to show the superior products they produce, and to share newsworthy information about events affecting Space Systems.

Dick was one of the thousands of Americans who cheered the landing of the Space Shuttle Discovery at Edwards Air Force Base several weeks ago. "As the shuttle touched down, people yelled and screamed, and they cried. . . it was great to see America back in space."

His interest in the space program is what actually brought him back into the fold of General Dynamics. Dick had worked at Fort Worth's Engineering Business Management for 18 years. The defense industry is not the only one to benefit from Dick's many talents; he worked in law enforcement at the Jefferson County Sheriffs Department in Golden, Colorado for 12 years. Dick received a special award from the governor for his help in the design of the Colorado law enforcement computer system.

Dick works in Systems Engineering, which is involved in systems identification, requirements, integration, and development on the Titan/Centaur program.

Actively involved with educational projects, Dick serves as the NMA manager for the Greater San Diego Science and Engineering Fair. It is geared toward developing youth in the science disciplines. The fair is held in Balboa Park each spring.

— Bill Walker, SDSU Intern

Space Systems Division *Orbiter* is published every other Friday. Items of interest to readers should be addressed to *Orbiter*, Mail Zone V2-7145 (Post Office Box 85990, San Diego, CA 92138). Telephone (619) 576-5705.

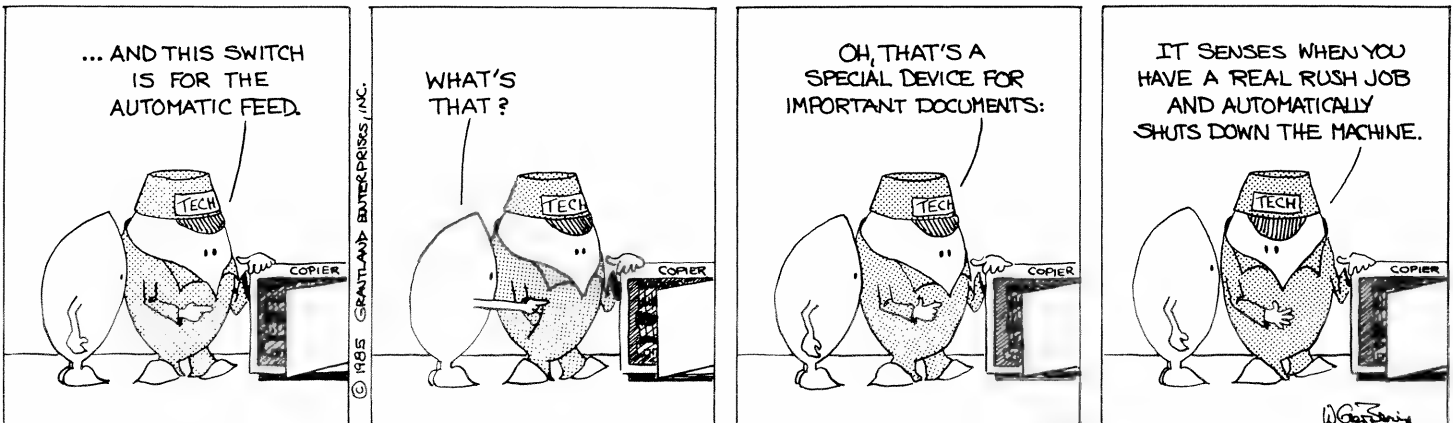
Rita Jackson, Cape Canaveral Air Force Station	853-7255
Ruth Cameron, Vandenberg Air Force Base	866-1709
Camille Kahlert, Huntsville, Alabama	880-0660

Linda Loffredo, Editor



Photo by Tim Whitehouse

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ORBITER

GENERAL DYNAMICS SPACE SYSTEMS DIVISION

November 18, 1988

Cost Competitiveness: Our Common Goal

"... It is the goal of this division to significantly reduce the cost of our products over the next five years."

— Joe Alcala
Director of Productivity

Even though it's not the time for making New Year's resolutions, cost competitiveness is one that needs to be made and renewed by all of us on a regular basis.

Cost competitiveness is an attitude, a way of thinking — a commitment.

Being cost competitive is essential for us to remain a strong, viable company in the space and energy programs industry and the international marketplace. To get

us started, our division has made a commitment to build 18 vehicles with corporate resources; the rest is up to us.

Space Systems is pursuing government contracts as well as commercial business — this is a whole new arena for us. We must be competitive to succeed.

With the award of several major contracts to Space Systems this past year, it's a good time to look at the way we do business, to evaluate its effectiveness, and to make improvements in the way we operate.

Since the beginning of the year, 150 cost-saving initiatives have been identified from both functional areas and program offices. These ideas are being tracked, investigated, and implemented.

We're on the right track, but need to do much more to meet our goal.

As you do your job, keep our goal at the forefront of your activity. Ask yourself: how can we reduce or avoid costs, simplify functions, and increase our efficiency? In short, how can we work smarter?

There are many ways to get your cost reduction ideas reviewed. For example, you can use the Employee Suggestion program, Cost Reduction proposal, or discuss ideas with your management. If you're not sure of how to go about making recommendations and suggestions, stop by or call Joe Alcala, the division director of Productivity. His office is on the second floor of Century Park One, or call extension 77291.

Remember, cost competitiveness begins with YOU!

Competitiveness: Employees Who Are Making It Happen

Tom Barkis and Tim Gladfelter work in Quality Assurance.

Their idea was to create and maintain a master document file of all quality clauses, inspection

requirements, and

inspection instructions

for each master part

number (EEE piece

parts and airborne

fasteners). This

standardization of

information on the

computer system will

save research time on

the dash part numbers of each master part

number. The net savings of their

employee suggestion was \$94,903. They

will split 10% of the net savings.



Tom Barkis



Tim Gladfelter



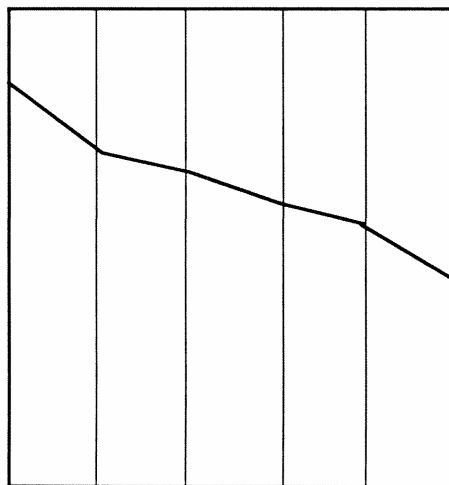
Lyle Butler

Lyle Butler discovered a duplication of effort in Procurement procedures that required separate PAs (purchase authorizations) for the same part numbers if the material

requested was required

for different work order numbers on the same contract. His proposal eliminates the requirement to issue separate PAs for each work order number by identifying the distribution of part costs by work order number on the bottom of the form.

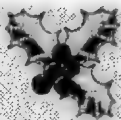
Lyle's Employee Suggestion easily saved over \$100,000 (a very conservative estimate) in the first year. He'll receive 10% of the company's net savings.



1988 1989 1990 1991 1992 1993

**Product Cost Goals
for Atlas & Titan/Centaur**

Caring, Sharing in Communities Across the Country



• Holiday Food Drive in San Diego •

The Holiday Food Drive will be held December 12 - 16. It is an effort to provide food to needy individuals at or below the poverty line who would otherwise not be able to share in the joy of the holiday season.

The largest of its kind in San Diego, the drive had a record collection of 260,252 pounds of food last year. In all, 7,480 families received Holiday food baskets in 1987.

We are asking for your support by bringing non-perishable food items to any one of the General Dynamics buildings and/or main gates during the week of December 12 - 16. The theme is 88 tons in '88 — let's go for it!

• Toys for Tots at Vandenberg •

Toys for Tots is a program to give toys and food to needy children and families throughout the community.

The program committee will accept donations of good used toys, new toys, canned goods, and/or cash contributions. Monies collected will be used to buy Christmas toys for needy children.

The collected toys and canned goods will be distributed during mid-December to the following organizations: Operation Outreach in Solvang, the Salvation Army in Santa Maria, and Christmas Cheer in Lompoc.

Brenda Daly is the project chair for General Dynamics Space Systems.

• Needy Family Program at the Cape •

Many needy families in the community will receive baskets of food and gifts to help during the holiday season from employees at Cape Canaveral.

Since October, committee members have been raising funds for this charity with projects like donut sales, a subway sandwich sale during lunch on Veterans Day, and bake sales. Next month there will be a drawing for a 1988 Fox Hunter Collectable knife set and other prizes at a raffle sale on December 21.

Last year, employees raised over \$2,200 to provide assistance to seventeen families in the Cape Canaveral area.



Awarding the plaque are (from left) Nan Condit, purchasing agent, and Jim Muir, manager of Procurement. Accepting the award for Richey Western Corporation are Robert Mariolo, vice president of Marketing, Richard Bergstrom, vice president of sales, and Dan Shields, general manager of the San Diego Branch.

The Space Systems Supplier Recognition program is based on both the quality and timely delivery of materials and services. Richey Western Corporation received the Supplier of the Month for August at their headquarters in Garden Grove, California.

Richey Western, a valued supplier of electronic components to Space Systems,

has a strong commitment to quality, performance, and service excellence.

Space Systems Division sincerely appreciate the efforts made by our suppliers to deliver quality products on time at competitive prices, and will continue to recognize those whose performance is considered exemplary.

Retirees

Thanks and good luck to these Space Systems employees who recently retired:

Paul Huitt, Launch Operations Supervisor, Vandenberg Air Force Base Production, 41 years

Jinx Janssen, Design Specialist Senior, Production Shipping & Receiving, 29 years

Thomas L. Lague, Engineering Specialist, Systems Analysis Guidance & Control, 19 years

George P. Nestor, Engineering Specialist, Advanced Structures & Design, 13 years

Robert R. Pettyjohn, Scientist Senior, Structures & Mechanical Systems, 31 years

More Dynaflex Training

Make-up sessions for the Dynaflex training will be available for new hires, transfers, employees moving to salaried positions, and people returning from leaves of absence. Advanced reservations are not required. Make-up sessions are:

Kearny Mesa building 17, room 1
December 2 and 16, 1 p.m.
Lindbergh Field building 14, room 5
November 18 & December 9, 1 p.m.

Repro Adds New Shift

by Mary Piper Jones, Copier Services

Copier Services has added a second-shift operation to provide better service when reproducing small, fast turn-around jobs during normal business hours.

Long-run, high-volume requests should be prepared for reproduction on the second shift.

The Copier Center at Century Park One will accommodate the new shift. Orders can be picked up and delivered from the Kearny Mesa building 26.

Call 75808 or 75882 if you have any questions about the new copier services.



PBS Programs

To recapture the events and impact of President Kennedy's assassination, General Dynamics commissioned a documentary film, "JFK - A Time Remembered." It will be broadcast on KPBS on November 21.

General Dynamics also was one of the underwriters of a KPBS documentary, "Camp David," to be run on November 21 and 24. Hosted by Ann Compton, ABC White House correspondent, it provides a behind-the-scenes look at the famous presidential retreat in Maryland.

New Construction Planned at the Cape

by Bradford Boulais
Facility Services

Two capital appropriation requests totaling \$5.5 million were approved by General Dynamics Corporate Office for new construction and renovation projects at Cape Canaveral Air Force Station.

The first request provides \$3.5 million for support facilities at Launch Complex 36. It will include renovation and reconstruction of Complex 36 A & B ramp areas, blockhouse, and blockhouse annex. New construction will consist of a 15,000-square-foot site support facility, and a 15,000-square-foot engineering office complex.

The second request provides \$2 million for the industrial area facilities. The projects include renovation and reconstruction of the Shipping and Receiving building. New construction consists of a 22,000-square-foot precision machine shop and fabrication area and an 8,000-square-foot warehouse facility.

Early completion of these projects will support AC-70 and MLV II launches. This work is in line with our commitment to provide new and upgraded launch facilities for expendable launch vehicles at Cape Canaveral Air Force Station.

T&O Planning

Manufacturing Engineering is offering a course in Tool & Operations Planning for hourly employees interested in that career path.

The instruction will consist of six weeks worth of 40-hour-a-week study during the normal business day.

The course, open to Space Systems employees only, begins on December 12. Bring an AVO from your supervisor releasing you from your department. If you are interested in pursuing a career in Tool & Operations Planning, stop by to get more information and/or apply during one of the following sessions on November 21, 22, 23 at Century Park One, MIC Room:

1st & 3rd shift employees
3:45 p.m. - 4:45 p.m.
2nd & 3rd shift employees
2:30 p.m. - 3:30 p.m.

Space Systems Welcomes 4,000th Employee!

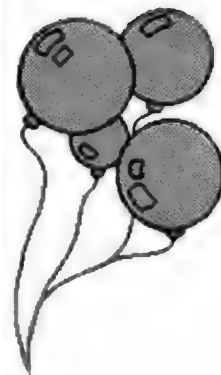
Timothy Hunt was the lucky person to roll the employment count at Space Systems to 4,000 last month.

Tim (center) joined our company as a jig & fixture builder in the Tooling department at Kearny Mesa building 5.

A native of Michigan, Tim completed an apprenticeship as a tool and die maker through the U.S. Department of Labor. He has been in San Diego for two years.

On hand to extend a warm welcome to the 4,000th employee at Space Systems was Vice President of Human Resources Bernie Kulchin (pictured far right). "We began the year with 3,019 employees," he said. "It's exciting for us to now have over 4,000 employees. As we work to

photo by Tim Whitehouse



meet our contractual agreements and commercial sales, we should continue to grow and prosper, offering a bright future for General Dynamics Space Systems."

Bob Guth, manager of Employee Relations (left) and Nancy Morris assisted with processing the necessary paperwork. Above, Tim is receiving a copy of the Employee Handbook and a promotional gift pack.

Space Briefs

Attention shoppers: **Bullocks Mission Valley** wants to thank General Dynamics for our contributions to the community by offering all employees a 10% discount on purchases of \$100 or more from November 25 to December 4. Stop by **CRA** to pick up a discount verification letter. . . "This a test, this is only a test," exclaimed employees at Century Park 2 last Tuesday during the **Fire Drill**, organized by our Safety & Health department . . . Congratulations to **Chris Karnes**, who was named Contracts & Estimating Employee of the Quarter. . . Sign up for the Cape Canaveral GDSS **Turkey Bowl** to try your skill at red pins bowling on November 20. Call **Terri Humphreys** at 36011. . . The first annual softball game between **Design** and **Analysis** engineers was held on November 9th. The Design engineers coasted to an easy 23 - 3 victory. Analysis engineers are still licking their wounds while the Designers are licking their chops in anticipation of next year's contest. . . Would you like to share your **Thanksgiving** dinner with one of the

needy children from the San Diego Home of Guiding Hands? If so, call **Channing Burns** at 77973. . . The next **management support & secretarial** brown bag luncheon will be held at the Titan/Centaur MIC Room in CP2 on November 30. The topic is EM/OS tips and answers. . . The **Orbiteer** will be taking a vacation on December 2, still enjoying the Thanksgiving break. Look for the next issue on December 16. . . Ethics Director **Dick Neal** is running the **Matching Gifts** program. . . Come to see what the **Weight Watchers at Work** program is all about, with no obligation. An open house and free session will be held during lunch on November 22 and 23. Call **Nancy Rose** at 38191 for details. . . Interested in **skiing** at Salt Lake City during the Thanksgiving break? If so, call **Anita Philp** at 79049. . . The world-famous **Rose Parade** will be held on the streets of Pasadena on January 2. **CRA Travel** is now taking reservations for the bus trip. . . Total **employment** for Space Systems as of November 11 was 4,043.

Holiday Dinners & Dancing



in San Diego. . .

Join the "Dazzling Reflections" Holiday Dinner & Dance on Friday, December 16, at the Marriott Hotel (formerly the InterContinental).

Elegant dining will be followed by a live band, Harvey & the 52nd Street Jive, playing a variety of contemporary, rock and roll, pop, and swing music. They've played as backup to Ray Charles and Oprah Winfrey, and are a favorite at Fat City.

Tables will be reserved for singles as well as couples. Super prizes in the Scholarship drawings, with a grand prize worth \$250. Discount room rates (\$74.52 for double occupancy) at the Marriott Hotel are available by calling Robbin Trent at 77010. Dinner & dance tickets are now on sale from NMA boosters. Cost is \$25 for NMA members; \$35 for nonmembers. Arrive early as parking is limited. Executive host is Charlie Lloyd.

at Vandenberg Air Force Base. . .

The annual Christmas Dinner Dance for all employees will be held at the Santa Maria Airport Hilton on Saturday, December 3. Enjoy a dinner selection of prime rib or halibut fillets with crabmeat. Music will be provided by the band Sunrise. John Kinde is the Master of Ceremonies. Cost is \$9 per person.

at Cape Canaveral Air Force Station. . .

All employees are invited to join the annual Christmas Party celebration to be held at the Cocoa Beach Holiday Inn on December 2. A buffet dinner will be followed by dancing to the music of the band Touch of Class. Tickets are on sale now through November 28 or until 400 tickets have been sold.

The purpose of the Space Systems Division *Orbiter* is to report the way employees — like Opal Davis, department secretary — work together, to show the superior products they produce, and to share newsworthy information about events affecting Space Systems.

Opal has been "skating" her way to happiness for many years. She used to rollerskate professionally, and now coaches many young people who are trying out for the Junior Olympics and other skating competitions around the country.

To maintain her vigor, she walks every morning. "If we all had her energy," remarked one coworker, "it would be great!"

There's a plaque on her desk that sums up her philosophy of life. The quote from Ralph Waldo Emerson has one phrase that is particularly meaningful: "To know even one life that has breathed easier because you lived. . . this is to have succeeded."

Opal began with General Dynamics in 1955 at the Engineering Test Labs. She recalled the excitement of watching test pilots take off from Lindbergh Field. Today, she's the department secretary for Structures and Mechanical Systems. Her responsibilities range from typing, filing, telephones, and routine duties — in short, making sure the office runs smoothly.

Opal is the mother of two children. Her daughter, Robyn Sutter, also works at Space Systems, in the Engineering Systems Analysis department. The family plans to get together for Thanksgiving to share "another delicious turkey and dressing dinner and the joy of the holiday season."

Bill Walker, SDSU Intern



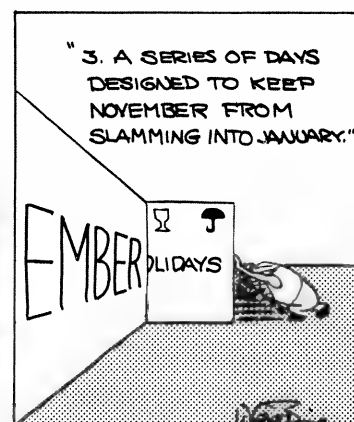
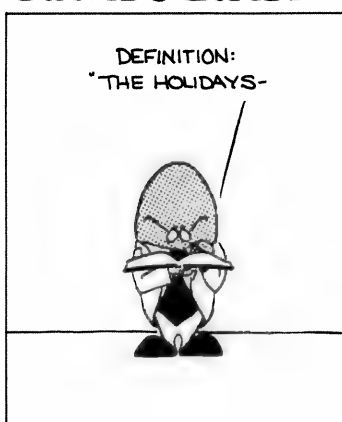
photo by Roger Jett

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Linda Loffredo, Editor

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ORBITER

GENERAL DYNAMICS SPACE SYSTEMS DIVISION

December 16, 1988

Dear Space Systems Employees:

As we prepare for the holidays, I want to extend my best wishes to you and your families for a happy, safe holiday season.

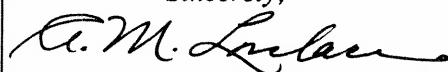
1988 was an outstanding year for us. The teamwork, dedication, and hard work displayed by all Space Systems employees from San Diego, Huntsville, Harlingen, Vandenberg AFB, and Cape Canaveral AFS contributed to reaching many of our goals.

Perseverance, our technological expertise, and effective teamwork enabled us to win major new business this past year. The business base that we've now established provides not only a secure future, but a firm platform from which to continue to acquire government and commercial contracts.

We've had many successes and accomplishments this past year — far too many to list here. I invite you to join me at the State of the Division Address on January 26 as we review 1988 and recognize departmental nominations for the Employee of the Year award.

The Space Systems Division staff members join me in thanking you for your support and extend wishes for happy holidays.

Sincerely,



Alan M. Lovelace
Corporate Vice President and
General Manager of Space Systems

DoD Says "A-OK" with Tri-Service Validation

Col. Andrew Zaleski II, deputy DCS comptroller and chairman of the Program Review Committee of the Air Force Systems Command (standing on left) presented Dr. Alan Lovelace with a Certificate of Tri-Service Acceptance at a ceremony in Kearny Mesa on November 30.

The Space Integrated Management System II (SIMS II) is our division's performance measurement system. It's the means by which we track both cost and schedule performance. It fulfills the requirements outlined in the Cost Schedule Control System Criteria (C/SCSC) as defined by our defense customers.

This validation qualifies us to bid on contracts for three branches of the Armed Services: Air Force, Navy, and Army. This validation SIMS II is the second validation received this year. Our system was validated in January 1988 for use on research and development contracts. This certificate validates our system for use on production contracts.

Securing a Certificate of Tri-Service Acceptance gives us an extra competitive edge when bidding on defense contracts in the future. A procuring agency needs only to review the specific application of our system for a newly awarded contract. They are not required to do a full system evaluation with each subsequent award.

The SIMS II system was validated based on its implementation on the Titan/Centaur production contract. In keeping with Dr. Lovelace's commitment, we will implement SIMS II on all future contracts as well.

According to Dick Hattings, manager, Titan/Centaur Program Finance and C/SCSC administrator, "This success was



due in large part to our team effort, positive attitude, and thorough knowledge of the system. Congratulations to employees on the Titan/Centaur team."

Organization Changes Underscore Renewed Emphasis at Bases

Staff reorganizations and promotions have been made at Cape Canaveral Air Force Station and Vandenberg Air Force Base because of the increased importance of the responsibilities and roles of our team members in those locations.

Changes include:

Frank Watkins and Chuck Harter are promoted to director of base operations at CCAFS and VAFB, respectively.

At CCAFS, Sy Baker is engineering manager of Atlas I/II Launch Operations, Clay Dennis is engineering manager of Titan/Centaur Launch Operations, Bob Beasley is manager of Support Services, John Phillips is manager of Quality Assurance, John Mazza is manager of Human Resources, Dick Andre is manager of Engineering Services, and Jack Dean is chief of Site Support.

At VAFB, Tom Heter is manager of Production, Dave Patterson is manager of Engineering Services, and Dick Neal is manager of Human Resources.

Quality on Parade

by Don Moore
Vice President of Quality Assurance

Quality Assurance showed off recently at the State of California's Quality Symposium. We were honored to be the first division from General Dynamics invited to participate. Space Systems was cited for its active role in promoting quality in producing goods and services.

The focus of the symposium was that the key to success in today's world marketplace is quality in both the manufacturing and services sector. Participants in this prestigious event were selected on the basis of recommendations by Quality professionals throughout the state. The conference was held in Los Angeles at the Museum of Science and Industry. It was sponsored by the California Joint Congressional Committee on Science and Technology. The event was one of the ways the Committee has used to improve the competitiveness of California industry in the face of increased foreign competition and constantly changing demographics.

Highlights of the symposium were the displays set up by the participating companies. Space Systems' entry carried the theme of "Built-In Quality" and featured models and pictures representing our innovative thinking, such as the Factory of the Future, the Advanced Launch System, and the Atlas and Magnet programs. This exciting exhibit was the result of a team effort by Manufacturing Technology, Marketing, and Quality Assurance.

Representing Space Systems at the Symposium were: Gregg Adolph, Doug Burleigh, Dr. Gail Dimitroff, Patrick King, Charles Revelle, Ron Roberts, and Lee Smith.

Attention, Graduates!

If you have received
a college degree
last summer or this past semester,
give us a call to let us know —
so we can share your
good news with the rest of
Space Systems Division.

Call Gail Golden at 65703

Kevin Jensen and Ron Garrett Earn Special Thanks When CPR Saves Co-Worker's Life

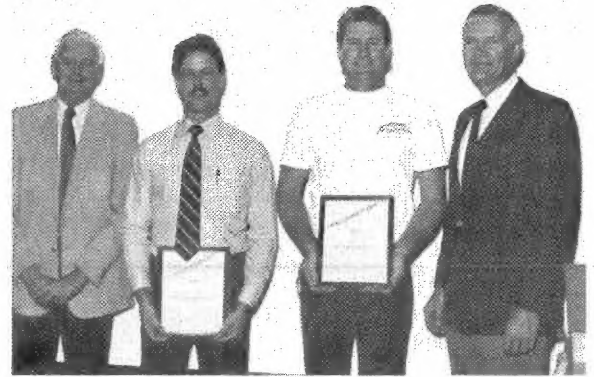
Thanks to the quick administration of CPR (cardiovascular pulmonary resuscitation) by fellow employees Kevin Jensen and Ron Garrett, the life of Robert Wills was saved when he became ill on the job.

On Wednesday morning, November 9, Robert began to feel ill while working on a bulkhead weld fixture at U. S. Air Force Plant 19.

A cerebral aneurysm soon rendered him unconscious and caused him to stop breathing. Within moments, Ron Garrett, tank assembler, and Kevin Jensen, Operations supervisor, began administering CPR to him until the ambulance arrived.

Ed Squires, vice president of Production (pictured far right) and Winston Hudson, Production director (on far left), presented Kevin and Ron with a citation award and a letter of commendation from Dr. Lovelace. Their comments sum it up best, "Your quick thinking, concern, and care for another person are a credit to you and your group."

Robert is home now. Doctors say he is recovering nicely.



Five GD Entries Selected in the "Quest for the Best"

The International Association of Business Communicators (IABC) hosted its annual "Quest for the Best" contest this fall. On December 7, an awards banquet was held to announce winners from each of the twelve categories.

Competition in the San Diego area was tough, but General Dynamics left the evening with five IABC awards.

John Clinger and Rick Wilson received an Award of Merit in publications for the Space Systems Security Manual.

The 1988 Space Systems Calendar produced by Jack Smothers and Suzanne Partlett took first place in the category of special publications.

The "Let's Do Launch" promo bag was voted the best in the graphics category. Suzanne Partlett and John Laven were responsible for design and illustration.

Julie Andrews received two writing awards. The first was the Career Writing Portfolio, for which she submitted a collection of human interest stories. Her series of articles on business ethics won the other award.

Naval Aviation Depot Seeks SSD Advice

After 69 years of repairing and modifying aircraft engines and components for America's defense, the Naval Aviation Depot on North Island is rededicating itself to its customers. In the past five years, they have been implementing a Total Quality Management program based on statistical process control.

As part of the process, North Island's Administrative Services identified key objectives toward meeting their goals, one of which is improved office automation and computer systems. GD Space Systems, considered a counterpart in the private sector, was asked for advice and good examples in that area.

Last month, a small group from Naval Aviation Depot visited our facilities to learn more about the services of Information Resource Management (IRM). IRM hosted discussions and provided tours of mailroom operations, FAX/TWX centers, management directives (SPs), word processing centers, and the electronic mail system.

According to Coralynn Nutter, IRM's chief of Integrated Office Systems, "Information exchange in these areas is beneficial to both of us."

Up the Ladder

Congratulations to the following people who received promotions these past few months. In the interest of space (no pun intended), only salaried grade 15 and above are listed:

David Lorentz and Tom Shemanski were promoted to engineering chiefs. . . James Boyd to project engineer senior. . . Dave Wolff to chief in Quality Assurance. . . William Stewart to financial supervisor. . . Barbara McNaughton and Philip Bunch to financial specialist seniors. . . Suk-hee Yoo to engineering specialist - Manufacturing. . . Harvey Maier and Mason Parsons to engineering specialists. . . James Parra to engineering specialist. . . Joseph Lemmo to manager of Contracts. . . James Spornick, John Erickson, and William Bring to engineering specialists. . . Michael Haro to engineering specialist - Plant Engineering. . . Charles Goforth to Production chief. . . Andrew Mackay to engineering specialist - Manufacturing. . . Bruce K. MacDonald to Estimating specialist senior. . . Stanley Maki to engineering specialist senior. . . Claude Bradford to group engineer. . . Robert Laff to group supervisor in Quality Assurance. . . Patrick Houle to financial specialist senior. . . William McCarter to financial supervisor. . . Jeff Patton to project engineer. . . George Resch to program manager in Quality Assurance. . . Joseph O'Loughlin to project coordinator. . . Jeweline Richardson, Mark Dornseif, and Robert Pinkham to engineering specialists. . . Richard Pleasant, George Howell, and Larry Blaylock to engineering specialists senior. . . Stephen Norris and Barbara Burton to engineering specialists. . . Gary McMinn and Robert Kennie to financial specialists senior. . . Stephen Babb and Steven Maurus to engineering specialists. . . Clay Westling to project engineer senior. . . Dennis Dimick to engineering specialist. . . John Prevolos, Suzanne Beggs, and Lawrence Doane to Master Scheduling supervisors. . . Eddy Hose to project engineer senior. . . James McDonald to Material project administration. . . Peter Morris to chief in Material Operations. . . Richard Klaar to engineering specialist - Manufacturing. . . and Randy Riecken, David Sisk, and Barry Matsumori to engineering specialists.

Vandenberg Air Force Base: Lending a Helping Hand

by Jack Hamner, Production Supervisor, BAB-6

Employees at Vandenberg Air Force Base are lending a helping hand in support of production programs in Harlingen, Texas.

The first 22-ton fairing access platform was completed and shipped to Harlingen last month. The platform is in support of the assembly and test of the 14-foot-diameter cylindrical section of the Atlas I fairing. The second platform assembly will be shipped before the holidays. There are two additional platforms in work in support of the assembly and test of the 11-foot Atlas I fairing.

Dana Batchelor (right) is grinding a bracing that has been cut to allow the stretch of a missile production trailer an additional 20 feet (total of 85 feet) in order to accommodate both the Atlas I and II vehicles in final assembly. Work is taking place in building 7525.



Space Briefs



Mark your calendar now for the **State of the Division Address** on January 26 to be held at the Sheraton Harbor Island. All employees are invited to attend; all ticket prices will be the same. . . **Mike Nagengast** was honored as the October Employee of the Month for the Material organization. . . Congratulations to **Ed Herring**, who was selected as the Employee of the Third Quarter for Material. . . Save those aluminum cans — the **Cans for Critters** campaign, which donates funds to the Zoo's Center for Reproduction of Endangered Species, will be held in February. . .

Chuck Dunn was selected as the Quality Assurance Employee of the Month for October. . . The San Diego CareUnit has **CareCabs** that they'll send out to any public place during the holidays if you, or a friend has had too much to drink, just call 697-4040. . . From the history files: This is the 25th anniversary of the first successful **Atlas/Centaur launch**. A/C 2 blasted off on November 27, 1963, from launch pad 36A in Cape Canaveral; the mission was research & development. . . "Competent, efficient, and courteous" was how Martin Marietta described **Security Officer Fred Williams** (CP2) in a letter of appreciation last week — way to go Fred! . . . A two-week **Mission**

Unique Access Demonstration was recently completed using the Titan/Centaur Forward Adapter and Payload Fairing Mockups in KM 5. Logistics engineers led by **Stan Domino**, mechanics and technicians led by **Ned Cross**, and **Al Vinzant's** Engineering staff received Pacesetter group awards. . . Out and about in the community are **Patti Higgins**, a new member on the board of directors for the World Board of Trade, **Bill DeGarmo**, volunteering his time on the executive committee of the American Red Cross, and **Charlie Lloyd**, who is serving on the board of directors of the Association of Retarded Citizens (sponsors of the Special Olympics). . . How does a trip to **Death Valley** the first weekend in February sound? If you're interested, call CRA Travel at 38248 for more information. . . Thanks to all those who have so generously contributed food to the **Holiday Food Drive** and toys to the **Mr. Teddy Bear Toy Drive**, all for needy families and children. . . New employees at the Cape were the honorees at a cookout the day before Thanksgiving, welcoming them to the division. . . **Space Systems' employment** for the week ending December 9 was 4,089.

"First Cut" Ceremony Held at the Cape

Launching Atlas rockets isn't the only activity going on at Cape Canaveral Air Force Station (CCAFS). The Space Systems team also supports the Atlas I, Atlas II, and Titan/Centaur programs by machining some of the parts that go into these launch and upper stage vehicles.

A First Cut Ceremony for Atlas II was held at the Cape on November 15. The Atlas II first cut was on a block of aluminum stock from which eight pieces of a plate will be manufactured. The plates will be used as design proof parts for the Atlas II split barrel which helps protect the payload from atmospheric stresses during launch ascent.

"It is unusual for the first cut on a major new program to occur at an operational site," said Frank Watkins, director of base operations at CCAFS. "It reinforces the reputation earned by our precision machinists over the years to produce quality flight hardware on schedule."

Machinists Rich Cook and Tony DeCola set up the production did the actual cut. The team at Cape Canaveral has manufactured more than 19,000 precision parts thus far in support of the Atlas I and Titan/Centaur programs.

On hand for the event were: Bill Phillipp, vice president of Medium Launch Systems; Frank Watkins; Don Gowin, chief of CCAFS Manufacturing Operations; Gerry Bodeker, second shift Machine Shop supervisor; Tom Hornsby and David Boedeker of the Facility Engineering Group; John Mazza, manager of Human Resources; Sy Baker, engineering manager of Atlas I/II Launch



Greetings from Space Systems Employees in Huntsville, Alabama
Huntsville Annual Picnic, October 15, Whiteburg Yacht Club

Operations; Jim Codd, manager of Customer Relations; and Bob Beasley, manager of Support Services.

Air Force representatives included Col. Harry Carothers, MLV SPO director; Lt. Col. Barry Zilin, deputy MLV SPO director; Major Greg Muntzner, MLV SPO Plans and Programs; Capt. Clint Markusch, MLV SPO Integration; and Lt. Col. Bob Tayloe, representing the 6555th ASTG.

The purpose of the Orbiteer is to report the way employees work together, to show the superior products they produce, and to share newsworthy information about events affecting Space Systems.

We hope that the Orbiteer has fulfilled these objectives in this, our first year of publication and service. We look forward to sharing more information and improving communication in 1989.

Thank you for your support this year. We'll be back in print on January 13.

Linda Loffredo, Editor

Holiday Giving

The holiday season is here, and the giving and receiving of gifts is a tradition that gives us an opportunity to share with others. We need to remember that the decision to give or receive items of value has ethical dimensions to consider.

General Dynamics has established guidelines for all employees to follow regarding gifts, gratuities, and items of value to customers or from suppliers. *The Standards of Business Ethics and Conduct* contain guidelines, the details of which are spelled out in Corporate Policy & Procedure 23-106 and 23-107.

Gifts received from a supplier that do not meet the prescribed guidelines must be returned with a letter informing the donor of our corporate policy. Be sure to send a copy of your letter to the Ethics office, mail zone 22-7000.

If you give a gift to a customer, make sure it meets the policy guidelines. In many cases, the most meaningful gift is a personal note or letter. Feel free to call Dick Neal at 77447 if you have any questions about this policy.

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